Global Health Fellows & Scholars

Fogarty International Center

National Institutes of Health

U.S. Department of Health and Human Services

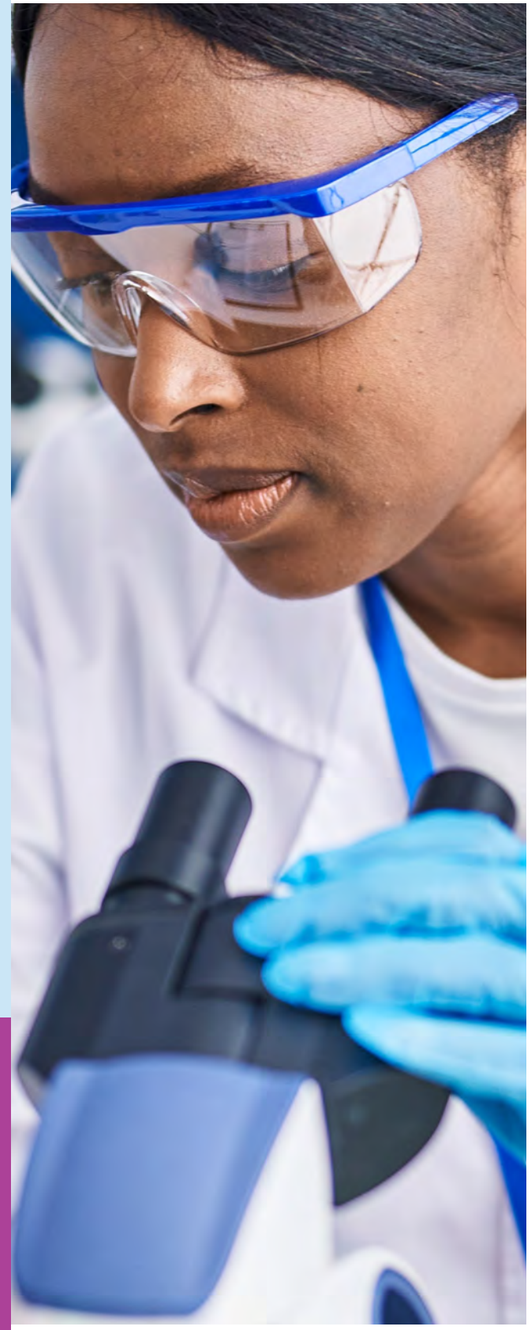
Advancing Science for Global Health

NIH Fogarty

MISSION

The Fogarty International Center is dedicated to advancing the mission of the National Institutes of Health (NIH) by supporting and facilitating global health research conducted by U.S. and international investigators, building partnerships between health research institutions in the U.S. and abroad, and training the next generation of scientists to address global health needs.

VISION A world in which the frontiers of health research extend across the globe and advances in science are implemented to reduce the burden of disease, promote health, and extend longevity for all people.



Use this QR code to learn more about the 20th Anniversary of Fogarty's LAUNCH program online.

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Global Health Fellows & Scholars 20TH ANNIVERSARY

MESSAGE

ROGER I. GLASS, MD, PHD
Former Director of Fogarty International Center

Some people question why the U.S. should invest in the training of American and foreign investigators in the broad area of global health. They ask, what's in it for us? There are many compelling answers to this question, and we see many reciprocal innovations—where discoveries made through our global collaborations directly impact how we care for patients at home.

Over the past 20 years, the Fogarty International Center at NIH has provided the opportunity for outstanding pre- and postdoctoral students, from the U.S. and around the globe, in medicine or the health sciences to participate in a one-year program in global health research. Through our Global Health Fellows and Scholars program, now called 'LAUNCH,' trainees develop research proposals of their choosing to be conducted at academic centers in a low- or middle-income country (LMIC) with mentors both in the U.S. and in the institution and country they select.

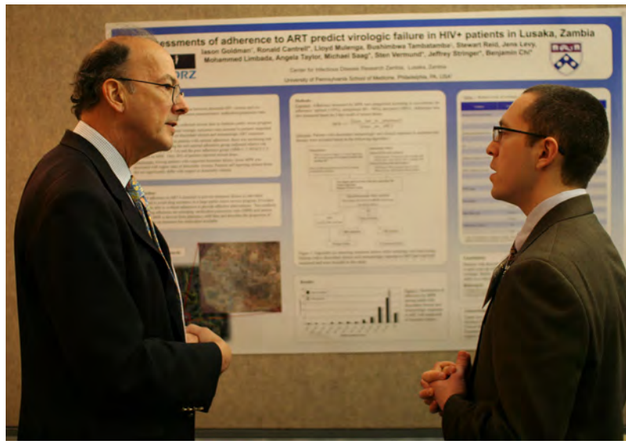
The program's goal has been to build the research workforce in global health by exposing students to the unique opportunities available to address research problems in health that cannot be studied at home. For many, this experiential learning has been transformative, a career catalyst.

As part of this 20th anniversary, we surveyed nearly 700 of the over 1,450 program alumni to determine if their current role reflects a continuing engagement in the theme of global health. These trainees, about half American and half foreign, currently supported by more than 24 U.S. institutions, have worked in 48 countries and published thousands of papers.

More importantly, many have or are becoming leaders in global health and continue to study topics they first engaged with during their time with the program. With the help of mentors and other collaborative programs, many have continued their research and partnerships long after their fellowships ended. Many alumni of this program are pioneers, leaders, and major contributors to global health research and have provided multi-year returns on our

"THEIR WORK ABROAD GIVES U.S. RESEARCHERS ACCESS TO GLOBAL PARTNERS AND CLINICAL TRIAL DATA NEEDED TO ADVANCE RESEARCH TO PREVENT AND CONTROL DISEASE."

Dr. Roger Glass poses with Fellows and Scholars at the 2011 orientation.



Top: Dr. Francis Collins poses with trainees at the 2015 orientation, Left: Dr. Roger Glass poses with the 2017 cohort, Right: Dr. Glass discusses a project with a former Fogarty Fellow in 2008, Bottom: Dr. Roger meets with Rosario Vivek at the 2009 orientation.

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investments in their training.

As I look around at American leaders in global health today, many began their careers by spending a year or more in an academic setting in an LMIC, where they were challenged to adapt their expertise and address a compelling global health problem. International research in the 20th century was highly focused on infectious diseases—especially HIV/AIDS, TB, and malaria. Yet, with the world's population growing increasingly old in the 21st century, study topics have expanded to address the dual burden of acute infectious diseases and chronic, noncommunicable diseases, including mental health, cancer, heart disease, and others. With these changes, the Fogarty Global Health Fellows and Scholars/LAUNCH program has evolved over the past 20 years. Today we see our fellows studying an ever-broadening range of topics, with infectious diseases and HIV/AIDS representing only about half of all fellowships.

We have found our Fogarty trainees on the front lines of the epidemics of HIV/AIDS, Ebola, Zika, and COVID-19 over these last two decades, using their skills to track the spread of disease and conduct studies of new diagnostics, treatments, and vaccines. Their work abroad gives U.S. researchers access to global partners and clinical trial data needed to advance research to prevent and control disease.

Similarly, we have identified populations in LMICs who, through collaborations, have enabled us to determine the viral causes of cancer and the genetic basis of many diseases both common, such as Alzheimer's disease, and rare. We have also learned about a full range of neurologic diseases from the work of our trainees in this program. If COVID-19 has taught us anything, it is that the world is interconnected. Only through global collaboration and the trust built through international research partnerships can we rapidly advance biomedical research and develop new ways to deliver care.

After 20 years, some of our former trainees have become leaders in global health while others are rising stars continuing to pursue research on pressing global health issues. We've included their accounts in this book to tell a compelling story of how this program has impacted their careers, given them insight into the challenges we face in global health, and empowered them to contribute to improving health for all.

Top: Dr. Roger Glass poses with former Fellows Drs. Evelyn Hsieh and Laura Lewandowski at Fogarty's 50th Anniversary celebration, Middle: Dr. Glass informally chats with a few Fellows and Scholars at the 2019 orientation.

Bottom: The 2014-2015 Fellows and Scholars pose with Fogarty staff and principal investigators of the program.

ORD

SATISH GOPAL, MD, MPH

Director of the Center for Global Health at the National Cancer Institute (NCI)
Former Fogarty Global Health Fellow, 2012-2013

While the program was not called LAUNCH when I began my Fogarty global health fellowship in 2012, the new name is unmistakably appropriate. Indeed, the program has effectively LAUNCHED the careers of countless global health luminaries worldwide who have made and will make seminal contributions to global public health. This is unequivocally illustrated by the profiles in this book and by the past, present, and future fellows who are too many to fit within these few pages.

In 2012, the statement "I want to be an oncologist and NIH-supported physician-scientist living and working in Africa" was not easily understood at most cancer centers in the U.S. When I was able to add that I had received some initial NIH funding for this endeavor, thanks to Fogarty and NCI as one of the very first Fogarty Global Health Fellows working on cancer, people started to listen. The opportunity created by my fellowship essentially catalyzed the creation of a new faculty position for me for which there was no institutional precedent. Institutions tend to notice when NIH is interested and investing, and Fogarty's LAUNCH program has been a critical vehicle for concretely demonstrating NIH's interest and investment in global health.

Even after this, and like many of us with global health interests, I often felt adrift during my early career in a largely U.S.-oriented biomedical research enterprise. It is very easy to wonder if such career aspirations are even possible or worthy of pursuit and if a more conventional path is the only way. Connection to the worldwide community of Fogarty-supported fellows and investigators is a fantastic antidote to this isolation and can be galvanizing for many of us who may not have a robust global health community available to us locally.

However, what I consider one of the fellowship's most important benefits is the access to role models and mentors. Many household names in global health research had come through Fogarty programs before leading the way to foundational discoveries or paradigm-shifting research and this provided me and

" FOGARTY'S LAUNCH PROGRAM HAS BEEN A CRITICAL VEHICLE FOR CONCRETELY DEMONSTRATING NIH'S INTEREST AND INVESTMENT IN GLOBAL HEALTH."

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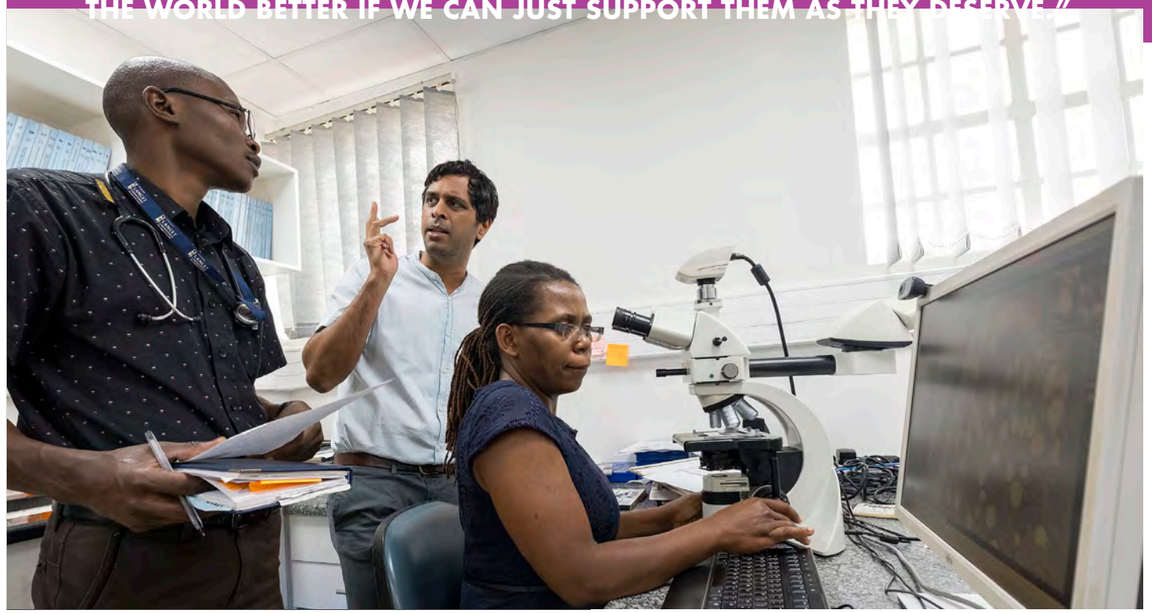
others with clear role models we could emulate. It is difficult to envision a path you haven't seen, and LAUNCH made certain that I could always see a path before me.

Since my Fogarty fellowship, I have been fortunate to receive subsequent grants from Fogarty and NCI that allowed me to stay in Malawi and build local capacity while investigating questions of local importance alongside Malawian colleagues and collaborators. I have been fortunate to recruit and mentor subsequent Malawian and U.S. fellows from many disciplines to join and add to our program while initiating their global health careers. I have been fortunate to have excellent partners like the Ministry of Health, which built a new National Cancer Center adjacent to our cancer research program to ensure that care and research activities were optimally aligned and integrated. Finally, I was fortunate to be recruited to NCI in 2020 to direct its Center for Global Health, where we seek to leverage our immense NCI resources and capabilities as the largest funder of cancer research in the world to help address cancer as the urgent global public health problem that it is.

Top: Dr. Satish Gopal poses with UNC-Project Cancer Program staff at Kamuzu Central Hospital in Lilongwe, Malawi, Bottom: Dr. Satish Gopal (center) with UNC-Project Cancer Program staff Tamiwe Tomoka (at microscope) and Edwards Kasonkanji (standing).

In sum, my participation in LAUNCH provided the seed investment, support system, and destination guide that made my career possible, as it has done for so many. As the profiles in this book demonstrate, the LAUNCH 20th anniversary provides us with an opportunity to recommit ourselves to supporting the next generation of global health researchers who will make the world better if we can just support them as they deserve.

" IT'S AN OPPORTUNITY TO RECOMMIT OURSELVES TO SUPPORTING THE NEXT GENERATION OF GLOBAL HEALTH RESEARCHERS WHO WILL MAKE THE WORLD BETTER IF WE CAN JUST SUPPORT THEM AS THEY DESERVE. "



OUR NIH PARTNERS

NCCIH
National Center for Complementary and Integrative Health

NCI
National Cancer Institute

NEI
National Eye Institute

NHLBI
National Heart, Lung, and Blood Institute

NHGRI
National Human Genome Research Institute

NIA
National Institute on Aging

NIAAA
National Institute on Alcohol Abuse and Alcoholism

NIAID
National Institute of Allergy and Infectious Diseases

NIAMS
National Institute of Arthritis and Musculoskeletal and Skin Diseases

NIBIB
National Institute of Biomedical Imaging and Bioengineering

NICHD
Eunice Kennedy Shriver National Institute of Child Health and Human Development

NIDCD
National Institute on Deafness and Other Communication Disorders

NIDCR
National Institute of Dental and Craniofacial Research

NIDDK
National Institute of Diabetes and Digestive and Kidney Diseases

NIDA
National Institute on Drug Abuse

NIEHS
National Institute of Environmental Health Sciences

NIGMS
National Institute of General Medical Sciences

NIMH
National Institute of Mental Health

NIMHD
National Institute on Minority Health and Health Disparities

NINDS
National Institute of Neurological Disorders and Stroke

NINR
National Institute of Nursing Research

NLM
National Library of Medicine

OAR
Office of AIDS Research

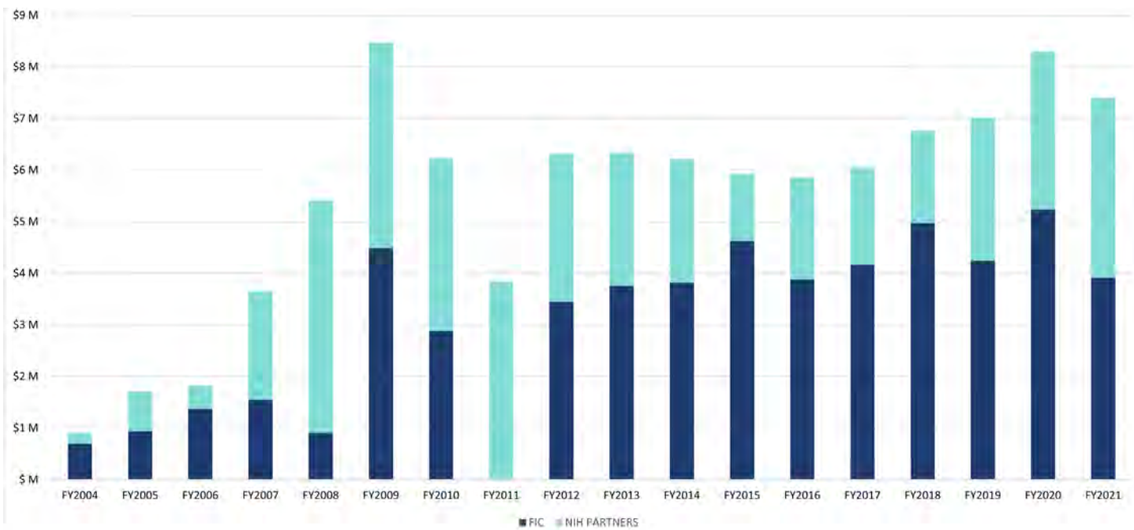
ORIP
Office of Research Infrastructure Programs

ORWH
Office of Research on Women's Health

SGMRO
Sexual & Gender Minority Research Office

TOTAL FUNDING BY FOGARTY (FIC) AND NIH PARTNERS, 2004-2021

The Fellows & Scholars program grants are leveraged with generous support—financial and otherwise—from many NIH Institutes and Centers, which greatly expands the reach and impact of the program to advance science and build the next generation of global health leaders.



FOGARTY FELLOWS AND SCHOLARS: A LOOK BACK

UNJA HAYES, PHD, Program Officer, LAUNCH

Fogarty's Global Health Fellows and Scholars program has grown from its modest beginnings with only 35 scholars at 14 research institutions to supporting over 100 scholars at over 60 research institutions and sites each year. Support for the program also has grown as partners like the Ellison Medical Foundation, U.S. Department of State, and more than 25 NIH institutes, centers, and offices have partnered with Fogarty over the years—a substantial leap from the two partners who helped start the program.

Now in its 20th year, the Global Health Fellows and Scholars program has been known by many names, mirroring its evolution in priorities, demand, and opportunities for greater impact. Nevertheless, with each change, the driving force remains the same: to inspire motivated early-career health professionals and researchers worldwide topursue a career in global health research, strengthen and expand research collaborations between the U.S. and low- and middle-income countries (LMICs), and further enhance research capacity at LMIC research institutions and sites.

In 2003, Fogarty partnered with the Ellison Medical Foundation to establish the Fogarty-Ellison Overseas Fellowship in Global Health and Clinical Research Training. The program was created to inspire students early in their professional training to consider a career in global health research by offering them first-hand exposure to challenging health issues faced by those living in LMICs and an opportunity to forge career-boosting relationships and scientific collaborations. Specifically, the program provided graduate-level U.S. students in the health sciences one year of clinical research training in an LMIC while also strengthening the research capacity in the country of study by supporting a matched or "twin" LMIC student. Fellows were placed at research institutions and sites with active NIH- and Fogarty-funded research and training programs allowing them access to accomplished U.S. and LMIC researchers who served as program mentors.

The recruitment, selection and matching of trainees were managed through a collaboration with the Association of American Medical Colleges (AAMC) and the Association of Schools of Public Health (ASPH). After submission, applications were reviewed by an AAMC review panel, followed by the Fogarty-Ellison program steering committee. Selected semi-finalists were then invited to the NIH campus to present their research proposals, learn more about the global health research funded by NIH, and interview with representatives from the LMIC institutions and sites. Final selection of the U.S. trainees depended on the rank matching of finalists and LMIC site representatives, research priorities of funders, and availability of funds. The LMIC institutions and sites underwent their own rigorous application and selection processes to match the U.S. trainees with a host-country trainee with similar research interests.

> **" TRAINEE PROJECTS INITIALLY FOCUSED AINLY ON HIV AND OTHER INFECTIOUS DISEASES. WITH ADDITIONAL FINANCIAL SUPPORT FROM NIH PARTNERS, THE RANGE OF RESEARCH TOPICS HAS BROADENED**

Trainee projects initially focused mainly on HIV and other infectious diseases. With additional financial support from NIH partners, the range of research topics has broadened to include areas like nephrology, heart disease, neurological disorders, mental health and cancer, to name a few. However, before being embedded into well-established research teams, the U.S. and matched LMIC trainees began their program year with an orientation at NIH. This event, a favored tradition still held every year, is an opportunity to meet the new cohort of program participants, discuss important topics in global health, and energize and inspire the trainees before beginning their "Fogarty" year.

In 2007, with the anticipated growth in size and complexity of the program, Fogarty changed its structure to become more centralized and awarded a grant to Vanderbilt University with recruitment support from AAMC and ASPH. The program also expanded to include both predoctoral students (scholars) and postdoctoral fellows. The redesigned program, renamed the Fogarty International Clinical Research Scholars and Fellows Program (FICRS-F), bridged the gap in Fogarty's global health research career pipeline between completion of graduate training and readiness to apply for career development and research grants.

Fogarty later partnered with the U.S. Department of State's Bureau of Educational and Cultural Affairs in 2010 to establish additional training opportunities for U.S. graduate students and, for a short time, postdoctorates through the Fulbright-Fogarty Fellowship in Public Health. Although managed like a traditional Fulbright fellowship, the trainees are integrated into the Fogarty-supported research training programs.

The substantial growth of the program over the ensuing years called for another restructuring in 2012. The new Fogarty Global Health Program for Fellows and Scholars supported five consortia, each consisting of four U.S. institutions—including minority serving institutions, for most —plus LMIC research partners. Participating research training institutions and mentors came from the network of established research collaborations between faculty at the consortia's U.S. institutions and those in LMICs. Each consortium developed its own global health research training program.

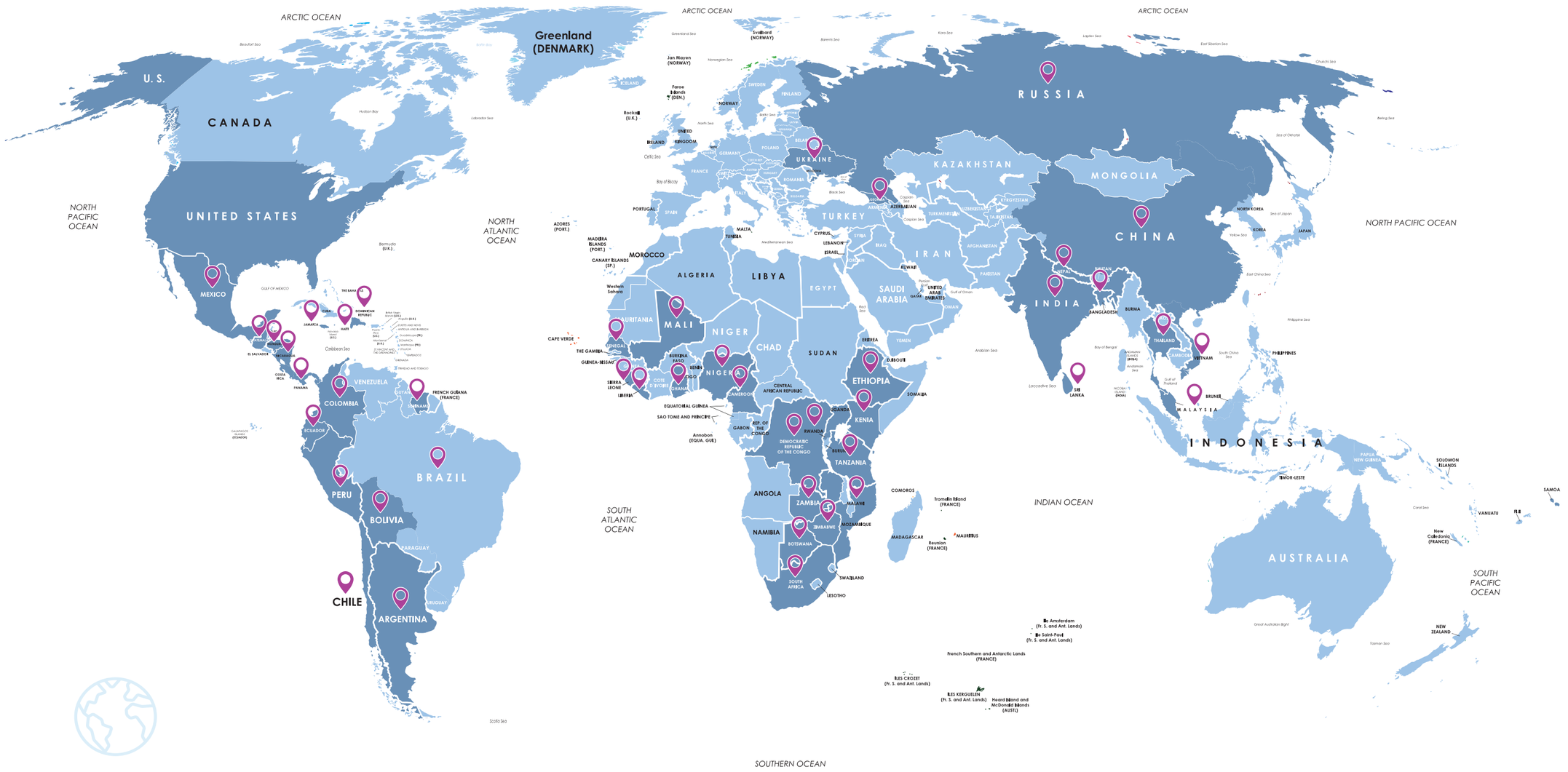
The consortia in this phase of the program were VECD, led by Vanderbilt University; NPGH, led by the University of Washington; UJMT, led by the University of North Carolina; GHES, led by the University of California, Berkeley; and GloCal, led by the University of California, San Francisco. In 2017, the renamed Fogarty Global Health Training Program grew to six consortia, welcoming HBNU, led by Harvard University.

Now in its fifth cycle, the program has a name that better reflects its intentions: the Launching Future Leaders in Global Health (LAUNCH) Research Training Program. It retains the consortia structure, with a refocus on training predominately postdoctoral fellows from the U.S. and LMICs and U.S. predoctoral students. LAUNCH emphasizes broadening participation to diverse groups in the U.S. It also aims to ensure a more equitable training experience for LMIC trainees with short-term research training in the U.S. The current consortia include NPGH, UJMT, GHES, GloCal, and HBNU, with the addition of two new consortia, INSIGHT, led by the University of Maryland-Baltimore, and ACHIEVE, led by Washington University in St. Louis.

Over the last 20 years, this program has 'LAUNCHed' the careers of hundreds of global health researchers. Trainees have gone on to publish many dozens of articles in peer-reviewed journals, and many have continued their research with subsequent funding from NIH. This book highlights the achievements of just a few of the more than 1,450 researchers who have trained through this program over the years. For every profile you read there are countless more success stories and an immeasurable impact on the field of global health research.

Name of the Program	Fogarty–Ellison Overseas Fellowship in Global Health and Clinical Research Training	Fogarty International Clinical Research Scholars and Fellow Program (FICRS-F)	Global Health Program for Fellows and Scholars	Fogarty Global Health Training Program	Launching Future Leaders in Global Health (LAUNCH) Research Training Program
Active Years	**2004-2007**	**2007-2012**	**2012-2016**	**2017-2021**	**2022-PRESENT**
Organizations & Consortia	Fogarty International Center Ellison Medical Foundation	Vanderbilt University	20 U.S. Institutions through five consortia • GHES • GloCal • NPGH Leaders • UJMT • VECD	24 U.S. Institutions through six consortia • GHES • GloCal • HBNU • NPGH Leaders • UJMT • VECD	28 U.S. Institutions through seven consortia • ACHIEVE • GHES • GloCal • HBNU • INSIGHT • NPGH Leaders • UJMT

COUNTRIES OF STUDY



A TRULY GLOBAL EXPERIENCE

Forty-eight countries hosted at least one research site from 2004 to 2021. The number of sites and countries expanded during each cohort. The first, Ellison, had sites in 15 countries. FICRS-F expanded to 24 countries. In 2012, trainees were scattered across 34 countries. Starting in 2017, this expanded to 39 countries. In the first LAUNCH cohort, alumni trained in 27 countries. Due to economic shifts and NIH requirements, some countries which participated in earlier years have had no fellows or scholars in recent years.

54%

FELLOWSHIPS IN SUB-SAHARAN AFRICA

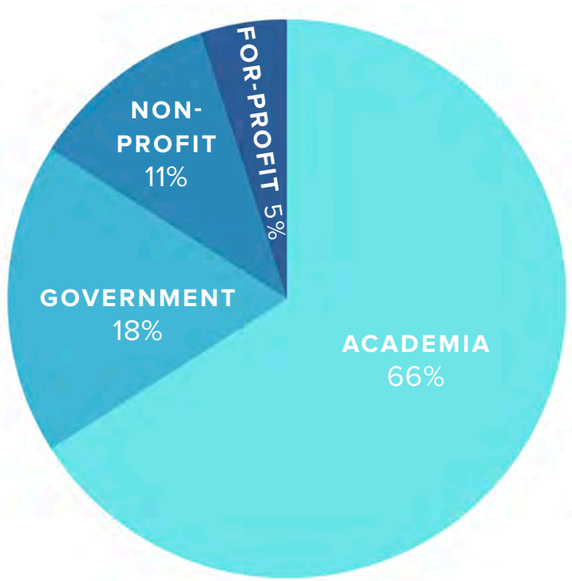
WHILE MORE THAN HALF OF FELLOWSHIPS FROM 2004-2021 OCCURRED IN SUB-SAHARAN AFRICA, ALUMNI HAVE BEEN HOSTED ON EVERY CONTENT EXCEPT AUSTRALIA AND ANTARCTICA

- Argentina
- Bangladesh
- Bolivia
- Botswana
- Brazil
- Cameroon
- Chile
- China
- Colombia
- Costa Rica
- Dominican Republic
- Democratic Republic of the Congo
- Ecuador
- Ethiopia
- Georgia
- Ghana
- Guatemala
- Haiti
- Honduras
- India
- Jamaica
- Kenya
- Liberia
- Malawi
- Malaysia
- Mali
- Mexico
- Mozambique
- Nepal
- Nicaragua
- Nigeria
- Panama
- Peru
- Russia
- Rwanda
- Samoa
- Senegal
- Sierra Leone
- South Africa
- Sri Lanka
- Suriname
- Tanzania
- Thailand
- Uganda
- Ukraine
- Vietnam
- Zambia
- Zimbabwe

A CATALYST FOR GLOBAL HEALTH CAREERS

When surveyed, the majority of alumni who responded (56%) indicated they continue to work in a career pertaining to global health. Of these, many have become true leaders in the field holding positions such as President of the National Council Board on Rare Disease for the Peruvian Ministry of Health; Chief Clinical Officer for the largest refugee clinic in Memphis, Tennessee; U.S. President's Malaria Initiative Resident Advisor to Kenya; Founding Associate Director of Office of Global Health Equity at Morehouse School of Medicine; and many more. Alumni have gone on to work for government organizations like WHO, UNICEF, UNAIDS, CDC, NIH, icddr,b, and the Kenya Medical Research Institute (KEMRI).

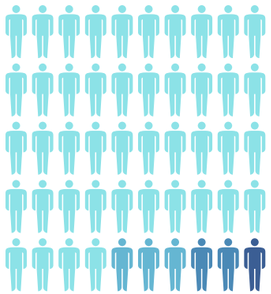
WHERE ARE THEY NOW?



56%
OF ALUMNI SURVEYED REMAIN IN GLOBAL HEALTH

- ACADEMIA
- GOVERNMENT
- NON-PROFIT
- FOR-PROFIT/INDUSTRY

Source: Based on a survey of more than 690 Fogarty alumni



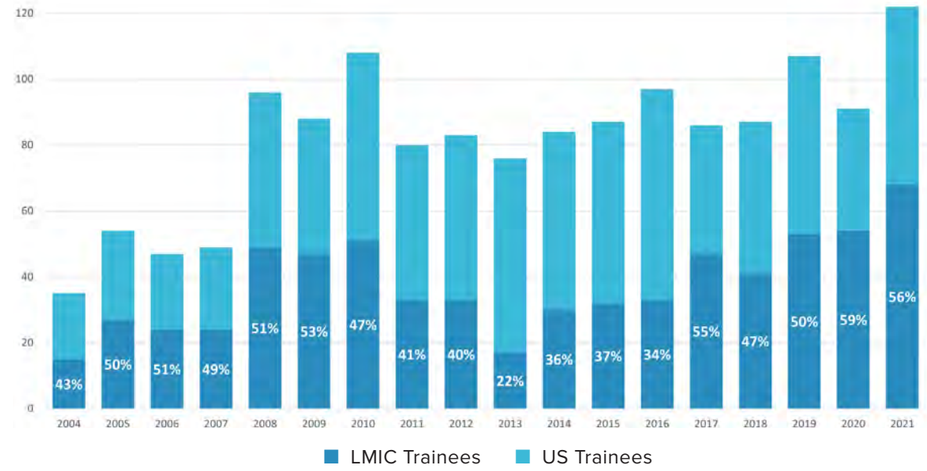
SPECIALTIES

- Allergy and immunology
- Anesthesiology
- Dentistry
- Dermatology
- Diagnostic radiology
- Emergency medicine
- Family medicine
- Internal medicine
- Medical genetics
- Neurology
- Nuclear medicine
- Obstetrics & gynecology
- Ophthalmology
- Pathology
- Pediatrics
- Preventive medicine
- Psychiatry
- Radiation oncology
- Surgery
- Urology

ENSURING AN EQUITABLE EXPERIENCE

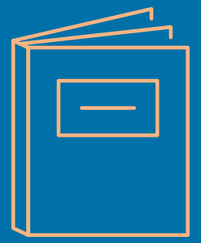
As part of Fogarty's goal to build future leaders in global health research, the Fellows & Scholars program has always included trainees from both the U.S. and low- and middle-income countries (LMICs). In earlier iterations of the program, LMIC participants were only able to work in their country for the duration of their project. To ensure a more equitable training experience, the LAUNCH program now brings LMIC trainees to the U.S. for short-term research training experiences.

PERCENTAGE OF U.S. AND LMIC TRAINEES OVER TIME



AT-A-GLANCE

90%
PUBLISH AFTER THEIR FELLOWSHIP



OVER
1,450
FELLOWS AND SCHOLARS TRAINED

SUPPORTED BY
40+
U.S. INSTITUTIONS

MORE THAN
26
SPECIALTIES REPRESENTED

Magaly Blas, MD, PhD, MPH

Current affiliation: Associate Professor, School of Public Health and Administration, Universidad Peruana Cayetano Heredia; Affiliate Associate Professor, Global Health, University of Washington; Director, Mamás del río (Mothers of the River) program

Fogarty Fellow & Scholar: 2004-2005; 2009-2010

U.S. institution: University of Washington

Foreign institution: Universidad Peruana Cayetano Heredia

Research topic: Decreasing sexually transmitted infections among underserved populations in Peru

As both a former Fogarty Scholar and Fellow, Dr. Magaly Blas has concentrated her work on helping vulnerable populations: the poor, indigenous women of the Amazon, and urban men who have sex with men (MSM). Her interest in the sexual health of these underserved populations was intensified by the inequalities she witnessed both within Peru and between Peru and the U.S. In the Amazon, Blas studied the human papillomavirus (HPV) and human T-cell lymphotropic virus, while also managing an HPV vaccine trial. Working in the jungle, she faced the challenge of tribal issues, native dialect and traditional roles for women, which means discussing sexual matters is uncomfortable, even for married women whose husbands often speak for them. The urban MSM community also has a distinct culture with some members identifying as heterosexual, which can complicate the communication and reception of HIV prevention messages. Her NIH career development grant led Blas to investigate the best ways to use technology to raise awareness of sexually transmitted diseases and promote HIV testing in the MSM population. Since her fellowship, she's received funding from Fogarty and the National Cancer Institute and won a series of awards, including the Elsevier Foundation Award for early-career women scientists, the 2016 L'Oréal-UNESCO CONCYTEC Award for Peruvian women scientists, and the Social Innovation in Health Award from the Pan American Health Organization. Blas credits Fogarty with helping her identify and cultivate her desire to improve women's health in rural and indigenous areas. This passion is the basis for her program, Mamás del río (Mothers of the River), which aims to improve maternal and newborn health in rural and remote Peruvian and Colombian Amazon regions. Blas noted that it often takes time for young researchers to identify the global health challenge they wish to dedicate themselves to, but by "having your feet in the communities you want to serve" your passion and commitment will soon be revealed.

" WITH FOGARTY, I LEARNED THAT THE FOCUS SHOULD BE THE PEOPLE AND THAT I CAN USE RESEARCH TO MAKE A DIFFERENCE."

Abigail Link, RN, MPH, PhD

Current affiliation: Lecturer, Lira University, Uganda

Fogarty Fellow: 2020-2021

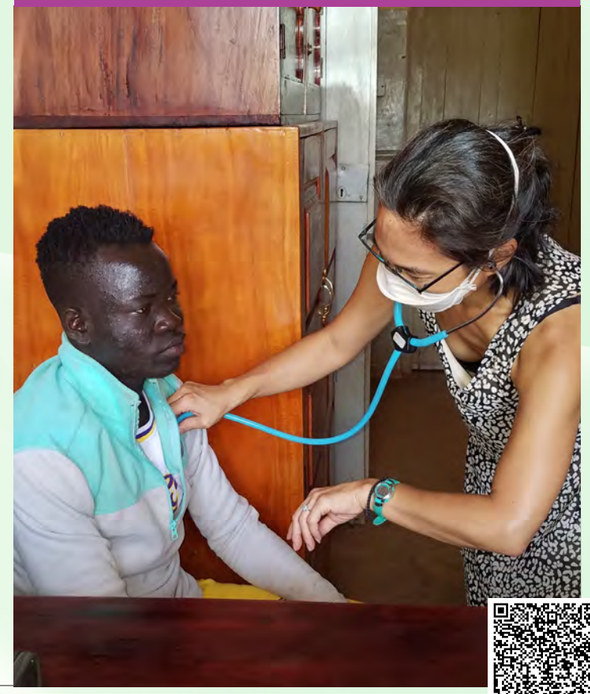
U.S. institution: University of Minnesota

Foreign institution: Makerere University, Uganda

Research topic: Meningitis surveillance and outcomes in Uganda

For many fellows, Fogarty provides the necessary support to pursue a difficult research question. Dr. Abigail Link first became interested in how cryptococcal meningitis (CM) was diagnosed and treated in northern Uganda, when a scientist friend, Dr. Paul Bohjanen, came to visit the region while she was working there as a lecturer at Lira University. CM is an opportunistic fungal infection that often afflicts people living with HIV and its symptoms include fever, intense headache, stiff neck, nausea, vomiting, sensitivity to light, drowsiness, and confusion. Bohjanen had been researching CM in Uganda's capital city, Kampala, and after his visit to Lira, decided to help start a program so that patients there could get treated even if unable to pay. For her Ph.D. dissertation, Link analyzed this new program and found about half of the patients with symptoms did not have a diagnosis of CM. Link's Fogarty project sought to answer the question: If not CM, then what other types of meningitis are making these Ugandan patients sick? The Fogarty fellowship program taught her project management lessons, while offering ample networking opportunities. It also allowed her enough time to interact with the people of Lira to learn how they perceived the health care system and what gaps existed for them. Looking to the future, Link plans to apply for NIH funding to develop a mental health screening tool that will be implemented in HIV clinics in Lira. She also plans to collaborate with Lira University on a training grant. Her highest aim is that her time spent in Uganda imparts sustainable change.

" IN GLOBAL HEALTH IT'S IMPORTANT TO INTERACT WITH PEOPLE TO UNDERSTAND THE GAPS THEY SEE."



Aileen Chang, MD

Current affiliation: Assistant Professor, Clinical Dermatology, University of California, San Francisco

Fogarty Fellow: 2016-2017

U.S. institution: University of California Global Health Institute (GloCal)

Foreign institution: Infectious Diseases Institute, Makerere University, Uganda

Research topic: Kaposi's sarcoma

Dr. Aileen Chang was Fogarty's first-ever dermatology global health fellow, and her project, which involved studying Kaposi sarcoma patients in Uganda, was the first of its kind in the program. While in Uganda, she investigated the use of locally made compression wraps for lymphedema, a condition associated with Kaposi sarcoma in which extra lymph fluid builds up in tissues and causes swelling. She reasoned that if the wraps were more accessible and the barrier of transportation costs was eliminated, patients would be more likely to adhere to treatment protocols. Today, as an assistant professor of clinical dermatology and director of Global Health Dermatology at the University of California, San Francisco, Chang focuses on addressing the unmet dermatologic needs of populations in the United States. When she began caring for patients at a large urban public hospital, the similarities in health challenges faced by her patients in the U.S. and in Uganda—often driven by social determinants of health—became very apparent. This realization motivated her to better understand the impact of these factors on dermatologic health and to develop interventions to address them. Chang says the practical knowledge and skills in research methodology, study implementation, and team management she gained in her Fogarty year have had an immense impact on her career. "It fortified my belief in the strength and power of human relationships to forge connections between individuals from different socioeconomic backgrounds, cultures, and lived experiences."

These connections created the foundation for strong collaborations and forward progress. Additionally, Chang says her Fogarty year taught her the importance of listening more, especially when communicating across cultural differences.

" APPROACH GLOBAL HEALTH RESEARCH WITH HUMILITY, LISTENING EARS, ADAPTABILITY, AND PATIENCE."

Anubha Agarwal, MD

Current affiliation: Assistant Professor and Co-director, Global Cardiovascular Health Program, Washington University

Fogarty Fellow: 2017-2018

U.S. institution: Northwestern University

Foreign institution: National Centre for Disease Control, India

Research topic: Global burden of cardiovascular disease

Dr. Anubha Agarwal emigrated to the United States from India with her family when she was about 5 years old, spending much of her childhood going back to visit. During her trips to India as a child, she began to notice the stark inequities between and within the two countries. Once in medical school, Agarwal felt drawn to cardiology but was unsure how to integrate it into her goal of solving health inequities in India. An introduction to Dr. Gerald Bloomfield, one of Fogarty's first cardiology fellows, answered her questions. She worked with him on AMPATH, a partnership between Moi University in Kenya, Indiana University, and the Kenyan government, and later decided to apply for a Fogarty fellowship. Agarwal's Fogarty project aimed to answer the question: How can we improve heart failure care in southern India? A systematic review of existing heart failure intervention programs revealed the existence of many quality improvement programs, but all had been developed for high-income countries, making it difficult to understand how they might translate to a low-income setting. Agarwal and her colleagues then conducted qualitative interviews with physicians, nurses, patients, and pharmacists in the Indian state of Kerala, asking them their thoughts on how to improve heart failure care. From there, the team designed a quality improvement intervention and tested it amongst 1400 patients in Kerala over six months. With the results of this work, Agarwal applied and was awarded a Pathway to Independence grant from the National Heart, Blood, and Lung Institute. Today, Agarwal is an assistant professor at Washington University in St. Louis and co-director of the Global Cardiovascular Health Program. She credits mentors with the significant progress she's made so far and when she thinks about her own leadership priorities, mentorship is at the forefront. Going forward, Agarwal plans to split her time between the U.S. and India.

" MY FOGARTY YEAR WAS THE MOST IMPACTFUL YEAR OF MY LIFE, BOTH PERSONALLY AND PROFESSIONALLY. IT CAN BE DIFFICULT TO TAKE A YEAR OFF FOR YOUR STUDY WHEN YOU ARE ON THE PHYSICIAN TRACK IN THE U.S., BUT YOU NEVER KNOW WHERE IT CAN TAKE YOU."

Amy E. Sims Sanyahumbi, MD

Current affiliation: Assistant Professor, Pediatric Cardiology, Baylor College of Medicine/Texas Children's Hospital

Fogarty Fellow: 2011-2013

U.S. institution: Vanderbilt University

Foreign institution: UNC Project, Malawi

Research topic: Pediatric cardiomyopathy

As a 2011-13 Fogarty fellow, Dr. Amy Sims Sanyahumbi studied deficiencies in cardiac function in children with HIV while running the pediatric cardiology clinic in Lilongwe, Malawi. She and her colleagues tested 240 children with HIV and 95 controls in the study for signs of heart function decline using portable echocardiography machines and evaluated their exercise tolerance in a six-minute walk examination. During her fellowship, she learned how to shape an idea into a feasible research project along with more tangible skills in data collection and analysis, writing and manuscript polishing. As a fellow, Sims Sanyahumbi also helped train Malawians in pediatric cardiology, echocardiography, patient care, and how to conduct research. Malawi has one pediatric cardiologist for an estimated 169,000 cases of rheumatic heart disease so Amy relished sharing the skills needed to better diagnose and care for patients. After her fellowship, she accepted a position as a pediatric cardiologist with Baylor College of Medicine / Texas Children's Hospital and was awarded a second Fogarty grant for a project aiming to improve adherence to benzathine penicillin in children with rheumatic heart disease. She has been based in Malawi for the last five years working on this project in addition to another study investigating the role of parasites in the development of acute rheumatic fever. Her work involves registering children with rheumatic heart disease and tracking their follow-up care. In her analysis of collected data, Sims Sanyahumbi considers both barriers to and facilitators of care, and ultimately plans to develop a comprehensive strategy that harnesses mobile and eHealth tools to improve adherence. The outcomes of her research are expected to benefit not only children in low-resource settings but also in the United States, where the incidence of rheumatic heart disease has declined yet still can be seen in areas of high poverty or in places with a significant immigrant population.

" SPENDING TIME ON THE GROUND DEDICATED TO RESEARCH ALLOWED ME TO THINK ABOUT AND DEVELOP MEANINGFUL PROJECTS AND ALSO GAIN SKILLS TO SUCCESSFULLY APPLY FOR FURTHER FUNDING."

Andrew Kim, PhD

Current affiliation: Assistant Professor, University of California, Berkeley

Fogarty Fellow: 2019-2020

U.S. institution: Northwestern University

Foreign institution: University of the Witwatersrand, South Africa

Research topic: Apartheid-based prenatal stress

Today, Andrew Kim, an assistant professor at the University of California, Berkeley, teaches a 300-person lecture course, "Introduction to Biological Anthropology." Yet, not so long ago he was a Fogarty Scholar whose South African project—an examination of intergenerational effects of apartheid-based prenatal stress on birth outcomes, neuroendocrine function, and mental illness risk across subsequent generations—was disrupted by the COVID-19 pandemic and subsequent lockdown. With no roadmap for handling this, Kim worked quickly to shift his research toward a new focus and his team began a survey of 220 Soweto adults about the mental health impacts of COVID-19. They found that respondents who perceived themselves at high risk of becoming infected with the new coronavirus experienced more severe symptoms of depression. Kim's desire to continue working in South Africa despite the pandemic was also fueled by an "ethical obligation" to support his research assistants, whom he'd already trained in survey data collection, interview technique, biomarker sample collection, and project administration. In the end, his fellowship provided insight and helped him grow scientifically. Kim has published many papers based on his Fogarty-supported research, while more recently, he partnered with a researcher from University of the Witwatersrand; they jointly applied for and received a grant to characterize long COVID-19 symptoms in adults living in Johannesburg. A concurrent study will explore the psychiatric symptoms of long COVID and specific biological factors that may precipitate them.

Kim advises those who are interested in capacity building to be both patient and tenacious, and to be mindful of the fact that they work within a context where they are a guest.

" FIND WAYS TO DEVELOP MEANINGFUL, SUSTAINABLE, AND EQUITABLE RELATIONSHIPS WITH YOUR COLLEAGUES AND RESEARCH SITES, EVEN AFTER YOU COMPLETE YOUR FELLOWSHIP."

Brie Falkard, PhD

Current affiliation: Senior Research Scientist-II, Clinical Virology, HIV Programs, Gilead Sciences

Fogarty Fellow/Scholar: 2012–2013

U.S. institution: Massachusetts General Hospital; Harvard University

Foreign institution: International Centre for Diarrhoeal Disease Research, Bangladesh (icddr,b)

Research topic: Immunological response to cholera in children

Brie Falkard spent years in labs experimenting on mice to earn her Ph.D. in microbiology and immunology. A Fulbright-Fogarty fellowship enabled her to step out of the lab and begin working with humans on clinical research while also gaining experience in global health. Her Fogarty project, which investigated immune system reactions of cholera patients in Bangladesh, focused on the hormone leptin, which mediates immune responses as well as metabolic processes such as appetite. After measuring the hormone in a group of children—some with cholera, others without—the team followed them for 180 days and discovered that leptin concentrations were lowest in sick children. Next, the team studied 74 infected children more closely and found an association between low leptin levels on the second day of illness and improved immune responses to cholera. Falkard and her colleagues concluded that the hormone plays a role in the antibody response to cholera in a published paper. Falkard's fellowship not only taught her lab skills in the areas of flow cytometry and immunological testing, but also management skills and how to adapt to different field conditions. Fogarty also provided an opportunity to work with some of the best scientists in the enteric disease field and led to mentorship that would guide her to a postdoc at Massachusetts General Hospital studying cholera vaccine research. This included building a lab and managing resources to conduct a clinical study of the oral cholera vaccine in Haiti. Returning from Haiti, Falkard accepted a fellowship at the Gates Foundation and worked on global health programs across multiple teams, including malaria, vaccine development, enteric disease and innovative technology groups, from 2018 to 2021. Collaborations with WHO, CDC and Gavi, the Vaccine Alliance, among others, exposed her to global health on the international and institutional levels. Since September 2021, Falkard has been at Gilead Sciences learning product development within the pharmaceutical industry. She manages a team of research scientists who participate in on-going clinical trial research and foster partnerships in the vaccine and drug development space for HIV. She noted that many Gilead teams obtain WHO-preapproval for the drugs and interventions they develop—for HIV and other infectious diseases, such as SARS-CoV-2—so they can be used in developing nations.

"IN GLOBAL HEALTH IT'S IMPORTANT TO BE ADAPTABLE AND WILLING TO WORK WITH LOTS OF DIFFERENT PEOPLE."

Ashley Karczewski, DDS

Current affiliation: Resident, Roswell Park Comprehensive Cancer Center; Research Consultant, Timothy A. DeRouen Center for Global Oral Health, University of Washington School of Dentistry

Fogarty Fellow: 2019-2020

U.S. institution: Indiana University

Foreign institution: University of Nairobi School of Dental Sciences, Kenya

Research topic: Oral health in children living with HIV

Ashley Karczewski was still in dental school when she became a Fogarty Fellow and joined the Children's HIV Oral Manifestations Project (CHOMP) in Kenya, home to approximately 150,000 children living with HIV. The project examines the relationship between oral disease, saliva, blood levels of vitamin D, and a patient's overall quality of life. People living with HIV often experience oral health issues, including tooth decay, painful sores and blisters, and periodontitis (bone loss around the teeth). The ultimate goal of the project is to gather data and then conduct a clinical trial to understand whether vitamin D supplementation can boost the innate immunity of children living with HIV. Since her Fellowship, Karczewski has finished dentistry school and begun a residency at a cancer center where she continues to work with medically compromised people. She's also begun work in Peru on a project sponsored by the Timothy A. DeRouen Center for Global Oral Health at the University of Washington School of Dentistry. Her fellowship taught her research methodology, grant and paper writing, and general research skills as well as the processes surrounding Institutional Review Boards. "I learned so much especially since I didn't have a Ph.D. and, previously, I'd only done bench research. I learned how to conduct research with patients and how to coordinate a study that involves people and not just samples." Karczewski credits Fogarty with guiding her towards a career in hospital dentistry and clinical research.

"THE BIGGEST HURDLE IS ACTUALLY COMMITTING TO A FELLOWSHIP—IT'S A LOT, BUT IT TURNED OUT TO BE THE BEST MONTHS OF MY LIFE."

Javier Cepeda, PhD, MPH

Current affiliation: Assistant Professor, Johns Hopkins Bloomberg School of Public Health

Fogarty Fellow: 2016-2017

US institution: University of California, San Diego

Foreign institution: Xochicalco University, Mexico; Secretario de Seguridad y Proteccion Ciudadana de Tijuana, Mexico; El Colegio de la Frontera Norte, Mexico

Research topic: Cost analysis of a police education program

During his Fogarty fellowship, Dr. Javier Cepeda worked on an innovative police education program in Tijuana, Mexico. The program attempted to protect police officers from occupational needlestick injuries while aligning law enforcement and public health priorities. Cepeda and his colleagues conducted a baseline survey of more than 1,000 police officers reporting syringe contact and later examined whether changing policing practices through education would be a cost-effective solution for reducing HIV incidence. He wanted to answer the question, "If you could change policing behavior—from confiscating syringes to referring people to drug treatment instead of prison—what would the impact be on HIV transmission?" His project has since informed a cost-effectiveness analysis on a human rights-based structural intervention to prevent HIV and drug overdose among people who inject drugs. His fellowship helped him develop as a manager; he compares overseeing his first independent research project with running a small business. Cepeda applies lessons learned during his Fogarty year to his current position of assistant professor of epidemiology at Johns Hopkins Bloomberg School of Public Health just as he has done in other leadership roles he's held. These include his work on the National Drug Control Strategy in the White House Office of National Drug Control Policy, a rewarding opportunity that helped him bridge academic research and evidence-based policy. Cepeda hopes to expand the frontier of research at the intersection of public health and human rights, which is especially relevant in low- and middle-income countries.

" GLOBAL HEALTH RESEARCH IS SO CRITICAL AT THIS MOMENT—IT IS A TERRIFIC OPPORTUNITY TO STEP OUTSIDE YOUR COMFORT ZONE, LEARN NEW SKILLS, AND BUILD COLLABORATIONS."

Christine Sekaggya-Wiltshire, MD

Current affiliation: Director, TB and HIV Clinic, Infectious Diseases Institute Makerere University, Uganda

Fogarty Fellow: 2015-2016

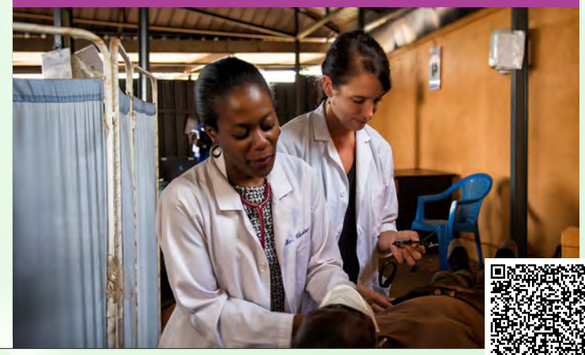
U.S. institution: University of North Carolina, Institute for Global Health and Infectious Diseases

Foreign institution: Infectious Diseases Institute, Makerere University, Uganda

Research topic: Drug pharmacokinetics and non-malignant hematology

As an investigator in pharmacokinetic studies, Dr. Christine Sekaggya-Wiltshire focuses on interactions between tuberculosis (TB) drugs and antiretroviral drugs for people living with HIV. TB drugs are known for high toxicity levels that can often cause adverse events like nerve pain and bone marrow suppression, especially in patients co-infected with HIV. For her 2015 Fogarty project, Sekaggya-Wiltshire reviewed the literature to find correlations between the concentration of TB drugs and treatment outcomes in people living with both TB and HIV. She found conflicting evidence around TB drug concentrations in the blood, patient toxicity levels, and cure rates for TB infection. Extending this research for her Ph.D., Sekaggya-Wiltshire studied 268 patients to determine if TB drug concentrations lead to higher toxicity levels among patients living with HIV. The review and cohort study showed that people living with HIV who were treated with recommended doses of two common TB treatments did not achieve the recommended blood concentration level. More studies are needed to determine if these lower-level concentrations are sufficient to cure a TB infection. Today, Sekaggya-Wiltshire leads the TB and HIV clinic at Makerere University's Infectious Diseases Institute (IDI) in Kampala, Uganda, while also working as a physician in the hematology unit at Mulago Hospital also in Kampala. Her research at IDI focuses on drug pharmacokinetics, the study of how drugs are absorbed and metabolized by patients. Supported by the National Institute of Allergy and Infectious Diseases, she focuses on the clinical predictors of adverse reactions related to higher doses of TB drugs in people with and without HIV. She hopes to understand who develops adverse reactions to these drugs and why. In 2018, Sekaggya-Wiltshire won the Stephen Lawn TB-HIV Research Leadership Prize award. She has served as a mentor for up-and-coming Fogarty Fellows at IDI. She hopes to continue building capacity for pharmacokinetics research in sub-Saharan Africa, especially for early-phase clinical trials, which are often started in the West and later brought to the region. She and the team at IDI have begun training doctors, nurses, and pharmacists to perform this work.

" WE NEED TO BUILD OUR CAPACITY TO IMPLEMENT EARLY-PHASE CLINICAL TRIALS HERE IN UGANDA, NOT ONLY FOR THE RESEARCHERS BUT FOR THE PATIENTS AS WELL, BECAUSE THE BURDEN OF DISEASE IS HERE."



Arti Kundu, PhD, MPH

Current affiliation: Project Manager, Marin County Environmental Health Division & Community Development Agency

Fogarty Fellow: 2013–2014

US institution: University of California, Davis

Foreign institution: All India Institute of Medical Sciences

Research topic: Role of unclean hands in water contamination

Each year, diarrheal diseases kill about 10% of Indian children under the age of 5, according to WHO. For her Fogarty project, Dr. Arti Kundu, who trained in civil and environmental engineering, partnered with a local nonprofit organization to select 152 households located on the outskirts of New Delhi to investigate whether their drinking water was contaminated with *E. coli.* Kundu used state-of-the art molecular diagnoses and computer modeling of physical, chemical, and biological processes and discovered that source water (from community pumps, municipal taps, and commercial tankers) was generally clean, but more than 65% of water in household storage vessels had fecal contamination. Additionally, she found a high correlation between gastrointestinal symptoms and the presence of *E. coli* on family members' hands—especially those of mothers. Kundu shared her study results with affected households and visited local schools to teach the importance of handwashing. Each child received a gift of soap as encouragement. Kundu collected data and samples and operated in a challenging environment, which taught her to manage her time and improvise. Overall, the independence of the fellowship gave Kundu the opportunity to see how much she could do on her own. She believes improving health in developing countries may often require the provision of clean water and enough food plus protection of vital ecosystems. Beyond India, she has participated in water studies in Thailand, Argentina, Israel, and Alaska. Following Fogarty, Kundu completed a master's degree in public health at University of California, Berkeley, focusing on epidemiology. Kundu believes Fogarty provided her with valuable independent research time plus networking and professional development opportunities, all while helping her acquire new skills and knowledge. Though she currently works within the U.S., she would consider future research projects abroad.

" BE PASSIONATE AND DEDICATED TO IMPROVING THE HEALTH OF POPULATIONS AROUND THE WORLD."

Edith Kamaru Kwobah, MD, PhD

Current affiliation: Head, Department of Mental Health, Moi Teaching Hospital, Kenya

Fogarty Fellow: 2015-2016

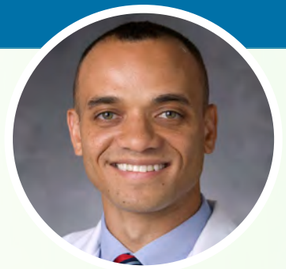
US institution: Vanderbilt University

Foreign institution: Moi Teaching and Referral Hospital, Kenya

Research topic: Mental health delivery in LMICs

Every day looks different for Dr. Edith Kamaru Kwobah, a psychiatrist and head of mental health at Moi Teaching and Referral Hospital in Eldoret, Kenya, where she works as a clinician, teacher, administrator, and, in her "free time," as a researcher. Working on many different things at the same time requires the strict time management skills that her Fogarty fellowship helped her develop. She connected with Fogarty through AMPATH (Academic Model Providing Access to Healthcare), a partnership between Moi University, Moi Teaching and Referral Hospital, several North American universities, and the Kenyan government. For her Fogarty project, Kwobah chose to study the prevalence of common mental disorders in a population sample from western Kenya. She and her team interviewed 420 adults for the study and found that, just like the rest of the world, the most common mental health disorders were depression, anxiety, and substance use disorder. Her team's most interesting discovery was that at least 45% of these adults had symptoms of a mental health disorder at some point in their lifetime, a higher number than the WHO's worldwide average of about 25%. And, roughly 16% had attempted suicide at least once in their lifetime, which is also higher than the WHO average. Kwobah noted that more than 75% of study participants had never sought care for mental illness, a significant treatment gap. Her Fogarty project provided a baseline for a new mental health care delivery program at Moi University that is integrated into a system initially created to manage chronic diseases like HIV, hypertension, and diabetes. Kwobah and her team train primary hospital professionals and community workers to screen community members for mental disorders and link them to care. Kwobah's team also provides community education for village elders, chiefs, teachers, religious leaders, and police officers to increase mental health awareness and reduce the stigma around seeking treatment. Using the data from her Fogarty year, Kwobah hopes to continue this research and evaluate how to increase the use of mental health interventions in Kenyan health care settings. Kwobah also spends time talking to the media and hosting online webinars to ensure the conversation on mental health continues.

" IDENTIFY AN AREA THAT YOU ARE TRULY INTERESTED IN AND WOULD LIKE TO BE ASSOCIATED WITH 20 YEARS FROM NOW."



Gerald Bloomfield, MD, MPH

Current affiliation: Associate Professor, Duke University School of Medicine; Associate Research Professor, Global Health, Duke Global Health Institute

Fogarty Fellow: 2009-2010

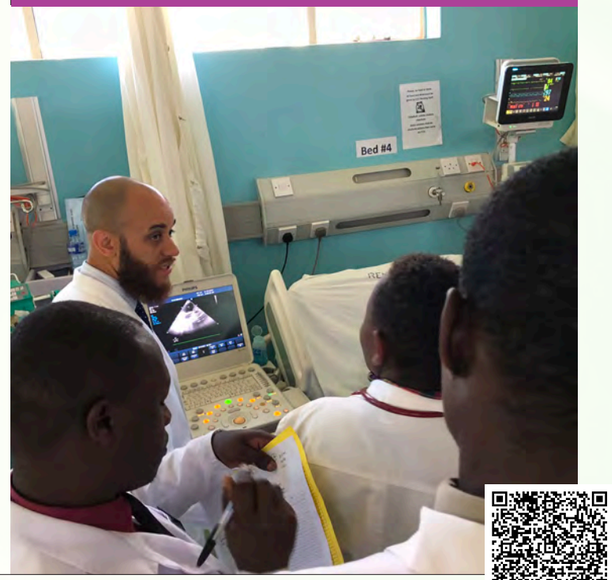
U.S. institution: Duke University, Brown University

Foreign institution: Moi Teaching Hospital, Kenya

Research topic: The cross-section between HIV and heart disease

When Dr. Gerald Bloomfield joined the Fogarty program in 2009, he was among the first cardiology fellows. The premise of his project was to look for markers of atherosclerosis amongst a patient population with heart failure in western Kenya. Atherosclerosis, a buildup of plaque and cholesterol on the wall of the arteries, wasn't thought to be a common cause of heart disease or heart failure in places like Kenya at that time. His study showed that the most common causes of heart failure in the region, such as uncontrolled high blood pressure, matched precisely what was described in the literature. However, the second most common cause among the 300 participants was atherosclerosis. To address the lack of available expertise in the region, he and his mentors developed a Cardiovascular Center of Excellence to conduct research, provide multidisciplinary training, and enhance care delivery for heart disease patients. A Fogarty International Research Scientist Development Award (IRSDA) in 2011 combined with funding from the National Heart, Lung, and Blood Institute supported Bloomfield's continued study of an overlap between heart failure and HIV among patients with well-controlled HIV disease. While his work in Kenya continues, Bloomfield also leads projects in the southern U.S. looking at best practices for heart disease care for people with HIV and investigating the use of non-invasive imaging to study heart function and detect early dysfunction. Bloomfield credits his Fogarty fellowship as a stepping stone to his current work as a clinician and associate professor in the Department of Medicine at Duke University, where he holds a secondary appointment in the Global Health Institute. Since his fellowship in 2009, dozens of cardiologists have gone through the program, and Bloomfield has had the opportunity to mentor several of them.

" LEAN IN. THIS YEAR HAS THE POTENTIAL TO BE A PIVOTAL POINT IN YOUR CAREER AND WILL OPEN MANY OTHER DOORS."



Emily Mendenhall, PhD

Current affiliation: Professor, Global Health, Walsh School of Foreign Service, Georgetown University; Honorary Faculty, Health Sciences, University of the Witwatersrand, South Africa

Fogarty Fellow: 2011-2012

U.S. institution: Northwestern University

Foreign institution: Public Health Foundation of India

Research topic: Type 2 diabetes among different income groups

As a Fogarty Scholar, Dr. Emily Mendenhall joined the Delhi research team conducting the Center for Cardiometabolic Risk Reduction in South Asia (CARRS) Surveillance Study—a community-based survey in India and Pakistan. Historically in India, type 2 diabetes was considered an illness of the elite, but CARRS data indicated a socioeconomic reversal as diabetes rates began to rise among Delhi residents with lower incomes. Working with CARRS, Mendenhall designed research instruments, trained researchers, and analyzed data. Mendenhall's analysis indicated that diabetes was experienced, perceived, and embodied differently by low-income patients compared to those with higher incomes. The findings also showed an inequitable distribution of depression, with 55% of the lowest income participants reporting symptoms compared to 38% and 29% of middle- and high-income participants, respectively. People with diabetes and low incomes were more likely to delay seeking care and have lower treatment rates and higher stress levels. After Fogarty, Mendenhall completed a postdoctoral fellowship at the University of the Witwatersrand in South Africa and a visiting fellowship at the London School of Hygiene and Tropical Medicine in the UK before beginning her position at Georgetown University's Walsh School of Foreign Service. She's published dozens of articles on syndemics, the study of similar co-existing epidemics, which culminated in her book, "Rethinking Diabetes: Entanglements of Trauma, Poverty, and HIV." Most recently, Mendenhall wrote the award-winning book, "Unmasked: COVID, Community, and the Case of Okoboji," an investigation of how people responded to COVID-19 in her hometown in Iowa. For those who wish to follow a similar path, she suggests being open, flexible, and creative. Her year in Delhi was extraordinary for learning about working on an interdisciplinary team, which she said exposed both her strengths and weaknesses.

" THE BEST PARTS OF THE FOGARTY FELLOWSHIP WERE THE FRIENDS AND COLLEAGUES I MET IN DELHI."

Ivan Segawa, MScEnd, BPharm

Current affiliation: Researcher, Makerere University, Uganda

Fogarty Fellow: 2021-2022

U.S. institution: University of Washington

Foreign institution: Global Health Uganda; College of Health Sciences, Makerere University, Uganda

Research topic: Nurse-led PrEP delivery for adolescent girls & young women in Uganda

As a Fogarty Fellow, Ivan Segawa helped create and evaluate an innovative pilot study for a health care delivery model that integrates oral pre-exposure prophylaxis (PrEP) into family planning clinics in Uganda. The sub-Saharan nation records 270 new HIV infections every week among women ages 15 to 24. Family planning clinics, unlike HIV clinics, are frequent stops for young women seeking birth control and their staff of experienced sexual and reproductive health nurses are familiar faces to many patients. Segawa and his team reasoned that these nurses were strategically positioned to identify teens and young women at high risk for HIV. He hopes his research will provide enough evidence to make this model of HIV prevention care sustainable. During his fellowship, Segawa learned best practices for writing manuscripts and constructing quantitative methodologies, while also acquiring skills related to project management, implementation science, economic evaluation, and policy development. He believed science was about clinics, labs, writing, and computers until he discovered project management. He found that being up to speed on managing human resources and finances is just as important as the science. Since his project's end, he's written two manuscripts, one on HIV self-testing, another on pre-and post-exposure prophylaxis; the first paper is nearing publication, the second is undergoing final edits. Recently, he became a study coordinator with the MOSAIC project at FHI 360. He's on track for a Ph.D. at the University of Washington, with support from his Fogarty mentors. Looking to the future, he hopes to exert a positive influence on health policies in his country and the wider region, based on his research and advocacy.

" THE FELLOWSHIP IS FOR A SHORT TIME ONLY SO USE ALL THE RESOURCES WISELY – YOUR MENTORS, PEERS, AND ONLINE TRAINING COURSES. THEY ARE CAREER CHANGING OPPORTUNITIES!"

Joan Matji, PhD

Current affiliation: UNICEF Country Representative to Botswana, United Nations Children Fund

Fogarty Scholar: 2005-2006

U.S. institution: Yale University

Foreign institution: University of Pretoria, South Africa

Research topic: Child and maternal health and nutrition

Dr. Joan Matji conducted her Fogarty project, which focused on maternal HIV care to prevent mother-to-child transmission, in 2005 as part of a partnership between Yale University and the University of Pretoria in South Africa. Matji and her team studied 317 pregnant women with HIV recruited at 28 weeks of pregnancy and a comparative group of about 53 HIV-negative women. They found that stigma often influenced the mothers' actions: because of the stigma around breastfeeding as an HIV-positive woman, most women, while pregnant, planned to formula-feed yet changed their minds after pregnancy due to stigma around formula feeding. The study also found that about 65% of the mothers were overweight or obese. From these findings, Matji and her colleagues began formulating recommendations for holistic interventions to address the stigma around disclosure and infant feeding practices for mothers. Fogarty training helped Matji fine-tune her existing research methodologies and approaches while learning new ones. She also improved her ability to critique research findings and find links between studies and public policy implications. Today, Matji serves as UNICEF's Country Representative to Botswana as a part of the United Nations Children Fund. She manages 22 staff members focused on developing informed nutritional recommendations and health policies for mothers and children under 5 and developing guidelines to ensure adolescents living with HIV adhere to treatment. Most of the work centers around providing technical advice to the government. Matji hopes to return to research and academia and continue to advocate for the mothers and children of Botswana.

" KEEP AN OPEN MIND AND TAKE ADVANTAGE OF THE NETWORKING OPPORTUNITIES AFFORDED TO YOU. THE BONDS I FORMED IN THE FOGARTY PROGRAM WERE SO BENEFICIAL TO MY CAREER."

Jose Hagan, MD

Current affiliation: WHO Disease Control and Elimination Team Lead, Europe

Fogarty Fellow: 2004-2005; 2011-2013

U.S. institution: Harvard School of Public Health; Yale School of Public Health

Foreign institution: Ministry of Health, Botswana; Oswaldo Cruz Foundation (FIOCRUZ), Brazil

Research topic: Infectious and vaccine-preventable diseases

A member of Fogarty's inaugural 2004 cohort of Fellow and Scholars, Dr. Jose Hagan's project was part of a clinical trial by the Botswana-Harvard AIDS Institute Partnership to find ways to prevent mother-to-child transmission of HIV. The team found that adding single-dose nevirapine on top of a short-course of zidovudine was much more likely to lead to an undetectable HIV viral load in breastmilk. During his fellowship, Hagan gained knowledge of lab virology and exposure to an array of basic epidemiology and public health concepts. Yet, the most important benefits, those derived from networking and exposure to global health, occurred in the margins.

In 2011, he traveled to Brazil on a second Fogarty fellowship, benefitting from the research partnership between Yale University and the Oswaldo Cruz Foundation (FIOCRUZ), Brazil's leading public health biomedical research institution. Along with immersing himself in infectious disease epidemiology, he mentored trainees and Fogarty Scholars as a junior research faculty member. As a follow-up to this, Hagan joined the CDC's Epidemic Intelligence Service at the height of the 2014 West Africa Ebola epidemic and found himself deployed to a remote corner of Liberia, where he helped lead the investigation of an Ebola cluster in a small village. Currently, Hagan is on detail to WHO's Europe office, where he is team lead for control and elimination of vaccine-preventable diseases. In this position, he has helped countries in Europe respond to COVID-19, which has taxed its institutions and created barriers for public health measures, such as declining rates in routine immunization.

" BE OPEN TO WHAT YOU CAN LEARN FROM THE OPPORTUNITIES YOU HAVE AND WATCH FOR WHAT THAT NEXT STEP WILL BE BECAUSE SOMETHING ALWAYS LEADS TO SOMETHING ELSE."

Eric J. Nelson, MD, PhD

Current affiliation: Assistant Professor, University of Florida (UF) Department of Pediatrics; Faculty member, UF Emerging Pathogens Institute

Fogarty Fellow: 2005-2006

U.S. institution: Massachusetts General Hospital, Harvard Medical School, Tufts University School of Medicine

Foreign institution: International Centre for Diarrhoeal Disease Research, Bangladesh (icddr,b)

Research topic: Cholera transmission

Dr. Eric Nelson, a pediatric hospitalist, began his Fogarty year with cholera transmission training on the NIH campus before he traveled to Dhaka, Bangladesh. There, his days began with pumping water from a pond into a barrel on the back of a flatbed rickshaw and then accompanying the rickshaw to the hospital. Observing all that was happening around him while working at the bench, he identified key factors contributing to disease transmission: the ability of *Vibrio cholerae* (the bacterium that causes cholera) to survive in nutrient-limited pond water and the ability of phages (little viruses) to infect and kill the *V. cholerae.* These findings led to multiple published papers. Nelson also helped create a tool for changing antibiotic prescription habits among doctors following his discovery that most cholera patients had antibiotics in their systems. Before his Fogarty year ended, Nelson was recruited to collaborate on a new staff training method for managing cholera and shigellosis outbreaks in resource-limited settings. Cholera Outbreak Training and Shigellosis (COTS), the system he helped to devise, has since been deployed globally. While in Haiti following the tragic 2010 earthquake, Nelson identified another problem contributing to high rates of illness: at night, when clinics are closed, children who lack access to clean fluids or basic medicines will transition from the early stages of illness to an emergency condition. To address this, Nelson's team created MotoMeds, a pediatric call center and motorcycle delivery service that transports medicines to patients' homes at night. MotoMeds is "absolutely transformative," said Nelson, who hopes that once validated, it will be deployed globally.

" HAD FOGARTY NOT PUT ME AT THE BENCH FOR A YEAR IN BANGLADESH, MY PORTFOLIO WOULD EITHER BE EMPTY OR FILLED BY TRADITIONAL BENCH SCIENCE."

Joseph K.B. Matovu, PhD

Current affiliation: Senior Lecturer, Busitema University Faculty of Health Sciences Uganda; Senior Research Associate, Makerere University School of Public Health, Uganda

Fogarty Fellow: 2018-2019

U.S. institution: Yale University

Foreign institution: Makerere University School of Public Health, Uganda

Research topic: HIV self-testing in Ugandan fishing communities

HIV prevalence is thought to be as high as 37% in Ugandan fishing communities. Since workers typically fish at night and sleep during the day, they miss out on health care services. Self-test kits could improve rates of HIV testing but distributing them in remote communities can be challenging so an innovative approach is needed, hypothesized Dr. Joseph Matovu. His Fogarty project found that, when social network leaders were trained to disseminate the kits in a fishing community, more than 95% of the kits were used and returned properly. This successful study was conducted in Rakai, Uganda, which is served by the Rakai Health Sciences Program (a collaboration between Makerere, Johns Hopkins, and Columbia Universities), and generated the necessary preliminary data to apply for a new grant. Matovu applied for and obtained funding from the European and Developing Countries Clinical Trials Partnership in 2021 to expand his HIV self-testing research to two fishing communities in the Lake Victoria region. Matovu, a behavioral research scientist with a doctorate in public health, said he concentrates on HIV testing research because patients can only get help and begin treatment once they learn their status. Currently, as senior lecturer at Busitema University and senior research associate at Makerere University, he hopes to expand peer-led HIV self-testing research to fishing communities in areas beyond the Lake Victoria zone, where health services are few and far between, to better understand the dynamics of providing service to itinerant men in fishing communities. Future projects will focus on how to increase the proportion of men who, after a positive self-test result, seek confirmatory testing; and how to improve connection to HIV care following self-testing. Matovu credits Fogarty with teaching him new skills, including how to design interventions and how to write and apply for grants. Fogarty also helped strengthen and expand his network of collaborators.

“ FOGARTY FUNDING WAS ESSENTIAL TO KICK-START MY CAREER AND YIELD THE PRELIMINARY DATA I NEEDED TO APPLY FOR FUTURE GRANTS.”

Justen Manasa, PhD

Current affiliation: Senior Lecturer and Biomedical Scientist, University of Zimbabwe

Fogarty Fellow: 2016-2017

U.S. institution: University of California, Berkeley

Foreign institution: University of Zimbabwe

Research topic: HIV drug resistance

Dr. Justen Manasa’s project as a Fogarty Fellow aimed to leverage advances in genetic sequencing and bioinformatics technologies to provide better real-time monitoring of HIV drug resistance in Zimbabwe for improved patient treatment outcomes. Monitoring HIV drug resistance is essential to determine which antiretroviral drugs are included in public health treatment regimens. Prior to his fellowship, Fogarty support allowed Manasa to pursue a master’s degree in molecular virology through a Stanford Medical School and University of Zimbabwe partnership. At Stanford, Manasa participated in SPARK, a translational research program that identifies research products from the academic community with potential to be taken to market as therapeutics, diagnostics, or medical devices. Returning to the University of Zimbabwe, Manasa became director of the Innovation Hub, a similar program to SPARK that helps academics transition to entrepreneurship. The Hub is poised to find and develop innovative research projects and turn them into products or services with the potential to improve health and help identify funding sources to enable the transition from academia to market. Manasa also serves as principal investigator for the Fogarty-funded Enhancing Non-communicable diseases (NCD) Research and Innovation Capacity (ENRICH) program focused on HIV genomics. Now in its second year, ENRICH aims to train master’s, doctoral, and postdoctoral candidates to be proficient NCD researchers in Zimbabwe and seeks to generate evidence for interventions that will improve care for people living in the region. Over the last two years, Manasa says he had to “grow up quickly” having watched COVID-19 take the lives of two of his closest mentors, the late Drs. James Hakim and David Katzenstein. Thrust into a leadership position almost overnight, Manasa says he is trying his best to fill their shoes and hopes to implement the lessons they taught him about mentorship as key to the development and lives of trainees.

“ IF YOU HAVE GOOD MENTORS AS A TRAINEE, YOU WILL FLOURISH ACADEMICALLY AND IN EVERY OTHER ASPECT OF YOUR LIFE.”

Emily Vogtmann, PhD, MPH

Current affiliation: Earl Stadtman Investigator, Metabolic Epidemiology Branch, National Cancer Institute, NIH

Fogarty Fellow: 2011-2012

U.S. institution: Vanderbilt University Medical Center

Foreign institution: Shanghai Cancer Institute and Shanghai Municipal Center for Disease Control and Prevention, China

Research topic: Cruciferous vegetable intake and colorectal cancer risk in men

As a Fogarty Scholar supported by the National Cancer Institute (NCI) in Shanghai, China, Dr. Emily Vogtmann had access to two large datasets on Chinese men and women. The epidemiologist and cancer researcher mined the data to discover whether diverse exposures, such as a troublesome gallbladder or a diet high in cabbage, might influence the risk of various cancers. Vogtmann learned many skills in China, including how to work with statisticians and appropriately handle diet data—knowledge pertinent to her NCI research. Her nutritional research in China also heightened her curiosity about diet's variable influence on the risk of cancer and other health conditions, and how diet might be tied to microbial differences in the gut. While a fellow, she completed three research projects, including one that found gallstones may increase the risk of liver cancer, advanced her doctoral dissertation, and published five first-author papers. Ultimately, the Fogarty project changed Vogtmann's career trajectory. Not only did she have access to two world-class cohort studies, she also learned from and worked with outstanding investigators who helped prepare her for a career in research. Currently, Vogtmann is the Earl Stadtman Investigator in NCI's Metabolic Epidemiology Branch, where she conducts novel research of the human microbiome and cancer risk. She noted that networking with her mentors and research partners led to her current NCI position.

" THE FOGARTY PROGRAM REALLY SETS FELLOWS UP FOR SUCCESS BY CONNECTING TRAINEES WITH ESTABLISHED INVESTIGATORS CONDUCTING NOVEL RESEARCH."

Laura Lewandowski, MD, MSc-GH

Current affiliation: Assistant Clinical Investigator and Head, Lupus Genomic and Global Health Disparities Unit, National Institute of Arthritis and Musculoskeletal and Skin Diseases, NIH

Fogarty Scholar: 2014-2015

U.S. institution: Duke University

Foreign institution: University of Cape Town, South Africa

Research topic: Pediatric lupus in South Africa

In 2014, a Fogarty fellowship led Dr. Laura Lewandowski to South Africa, where she studied pediatric lupus, which causes the body's immune system to attack healthy cells and tissues. At the time, there was scant literature on the disease in Africa so many doctors assumed it happened less often there, if at all, compared to the U.S. Yet Lewandowski knew that the disease is more common and severe in people of African descent and that children are at greater risk for severe forms of the disease. At the University of Cape Town Children's Institute, Lewandowski analyzed the medical records of 72 children who had sought treatment for lupus. When she compared data for the South African cohort with a registry of 900 lupus patients in North America, Lewandowski discovered that South African children tended to develop the condition at a younger age than their counterparts and were also more likely to develop a more severe form of the disease. This was likely influenced by barriers to diagnosis and care, noted Lewandowski and her co-authors in a published report. Today Lewandowski investigates the genetics of early-onset systemic lupus erythematosus in global populations in her lab at the National Institute of Arthritis and Musculoskeletal and Skin Diseases. She holds positions on the Paediatric Global Musculoskeletal Task Force and the American College of Rheumatology (ACR) Global Engagement Committee, and recently co-chaired a global summit at the ACR Annual Meeting. In 2020, she was awarded a Gates/Stanford WomenLift Leadership Fellowship. She believes her Fogarty project, which helped her view illness through a global lens, laid the foundation for her current work. She also learned skills to engage in and foster international research collaborations, which she used to build a network of colleagues and collaborators that continues to grow today. On a recent trip to Pakistan, she trained staff, met with local physicians, and launched a lupus collaboration. Closer to home, she has expanded her research into Mexico. Her dream? To compile an international comparison of lupus patients of different ethnicities.

" WORKING EQUITABLY IN RESEARCH COLLABORATION ALLOWS FOR BI-DIRECTIONAL LEARNING, WHICH BENEFITS RESEARCHERS, PATIENTS, AND CARE."

Lily Gutnik, MD, MPH

Current affiliation: Assistant Professor of Surgery, University of Alabama at Birmingham (UAB) School of Medicine; Assistant Professor, UAB School of Public Health; Associate Vice Chair, Global Surgery

Fulbright-Fogarty Fellow: 2014-2015

U.S. institution: University of North Carolina

Foreign institution: UNC Project-Malawi/Kamuzu Central Hospital, Malawi

Research topic: Cancer screening in low-resource settings

Up to 90% of women diagnosed with breast cancer in developed nations survive compared to just 10% of women in developing countries. It was this injustice that inspired Dr. Lily Gutnik during her Fulbright-Fogarty fellowship to train four Malawian women with no health care background to do breast exams and give educational talks in clinic waiting rooms. As part of the University of North Carolina's Project-Malawi cancer group, Gutnik's trainees examined more than 1,000 patients, referring 67 whose results were abnormal to Gutnik and a colleague. Her experience in Malawi helped solidify Gutnik's reasons for becoming a breast surgeon—and, more generally, for advancing women's empowerment through health care. Today, Gutnik remains active in sub-Saharan Africa, where she collaborates on breast cancer research studies in Nigeria and Kenya. She also supervises a doctoral student in Tanzania, another site of her research, and serves as advisory board member to several international organizations on breast cancer. Her Fogarty work was "a huge launching point" for her career and resulted in several conference presentations and published manuscripts and led to her reputation as an expert in cancer screening in low resource settings. Gutnik noted that there is less funding for global health research compared to other tracks and usually it's more difficult to find academic departments to support the work. Despite these hurdles, she's found her dream job at University of Alabama at Birmingham where 60% of her time is devoted to clinical care, the remainder to research. With eight mentees, she is making true progress mending global and domestic breast cancer disparities while focusing on women of African ancestry.

" A CAREER IN GLOBAL HEALTH RESEARCH IS A CHALLENGING ROAD, BUT LIKE MOST HARD THINGS, IT'S ABSOLUTELY WORTH IT AND THE WORK IS INCREDIBLY REWARDING!"

Evelyn Hsieh, MD, PhD

Current affiliation: Associate Professor, Medicine (Rheumatology, Allergy & Immunology), Yale School of Medicine; Associate Professor, Epidemiology (Chronic Diseases), Yale School of Public Health; Chief, Rheumatology, VA Connecticut Health Care System

Fogarty Fellow: 2004-2005; 2012-2013

U.S. institution: Vanderbilt University; University of North Carolina, Chapel Hill

Foreign institution: Universidad Peruana Cayetano Heredia, Peru; Chinese Academy of Medical Sciences

Research topics: Sexually transmitted diseases; Osteoporosis

Dr. Evelyn Hsieh first received Fogarty support when, as a medical student, she researched sexually transmitted diseases among Ecuadoran sex workers in Peru. The hands-on experience, including developing a study and writing a grant, enabled her to focus more intently during a second fellowship, which she began while a doctoral candidate. For this second Fogarty project, Hsieh examined the link between breast cancer and osteoporosis in China, where breast cancer diagnoses occur at age 49 on average—12 years earlier than in the U.S. This research, which was part of a retrospective study evaluating more than 4,000 Chinese women with breast cancer to identify those at highest risk for fracture, gave her rare access to a large study population. Following Fogarty, she joined the faculty at Yale School of Medicine and Yale School of Public Health and returned to China, where she collected data for a study of bone loss risk among individuals living with HIV in Beijing, while also serving as a visiting researcher at Peking Union Medical College Hospital. Working with the China AIDS Clinical Trials Network and other large cohorts and registries, Hsieh built an impressive methodologic skill set, which she subsequently put to use with other cohorts and registries, including the U.S. Veterans Aging Cohort Study and the Global Rheumatology Alliance COVID-19 Registry. As a result of Fogarty, Hsieh believes that having a mentor in the host country committed to making the year a productive experience is "worth its weight in gold." At Yale, she co-founded and is faculty lead of the Yale Network for Global Non-Communicable Diseases, which focuses on building collaborative research and education partnerships on global NCDs. She remains passionate about fostering the next generation of global health researchers, serving as a mentor for the Global Health Equity Scholars site in Peru and program director for the China Medical Board Global Health Leadership Development Program—a collaboration of the China Medical Board, Yale School of Medicine, London School of Hygiene and Tropical Medicine, and Peking University.

" INVEST IN RELATIONSHIPS BECAUSE MUTUAL RESPECT, TRUST, AND ACCOUNTABILITY ARE CRITICAL TO BUILD SUSTAINABLE, EQUITABLE, AND REWARDING PARTNERSHIPS."

Leah Katzelnick, PhD, MPH

Current affiliation: Earl Stadtman Investigator and Chief, Viral Epidemiology and Immunity Unit, Laboratory of Infectious Diseases, National Institute of Allergy and Infectious Diseases, NIH

Fogarty Fellow: 2018–2019

U.S. institution: University of California, Berkeley

Foreign institution: Universidad San Francisco de Quito, Ecuador; National Virology Laboratory, Nicaragua

Research topic: Connection between Zika and dengue infections

Fogarty Fellow Dr. Leah Katzelnick arrived in South America in mid-2019 during the first dengue epidemic that occurred following the tragic 2015 outbreak of Zika fever, which had swept through South America and the Caribbean. At that time, thousands of infected pregnant women suffered miscarriages, while more than 3,700 delivered babies with microcephaly or other congenital abnormalities. Zika virus is a relative of the region's endemic dengue virus—both are mosquito-borne flaviviruses—and Katzelnick's research showed that a previous Zika infection increases the risk of dengue disease severity. Katzelnick learned a lot from her fellowship, including project management skills, the patient consent process and how to build capacity. Since Fogarty, she has presented her research to a CDC advisory board and a Zika task force, both of which included policymakers who decide on recommendations for the dengue vaccine and any future Zika vaccines. Her investigation of antibody kinetics and resulting immunity in relation to disease severity is applicable to any community worldwide where flaviviruses circulate. At the end of 2019, Katzelnick transitioned to her current position at NIAID, where she continues to explore immune interactions between flaviviruses. Her Fogarty experience has served as the model for setting up her lab which focuses on viral epidemiology and immunity. Her current research team, like her Fogarty team, uses a multidisciplinary approach encompassing virology, immunology, and epidemiology to investigate protection against and susceptibility to immunologically complex emerging viruses to inform safe and effective deployments of vaccines.

" DO WHATEVER YOU CAN TO STAY CLOSE TO AFFECTED COMMUNITIES. THE WORK SHOULD ALWAYS BE MOTIVATED BY A DRIVE TO IMPROVE GLOBAL HEALTH."

Matchecane Cossa, MD

Current affiliation: Director, National Program of Surgery, Ministry of Health of Mozambique; Thoracic Surgeon, Hospital Central de Maputo, Mozambique

Fogarty Fellow: 2015–2016

U.S. institution: University of California, San Diego

Foreign institution: Universidade Eduardo Mondlane, Mozambique

Research topic: Evaluation of surgical care in Mozambique

Dr. Matchecane Cossa sought a Fogarty fellowship after he was selected by Mozambique's Ministry of Health to serve as director of the National Program of Surgery. At a more advanced stage in his career than most other fellows, the thoracic surgeon cobbled together a team of medical students, residents, and surgeons across the country to study the impact of his nation's many non-traditional 'surgeons.' In Mozambique, there is only one surgeon for every one million people, so nurse technicians are trained to perform essential operations in the southeastern African nation. For his Fogarty project, Cossa used standard WHO criteria to measure the volume and also the quality of surgical care in 45 district hospitals. He tallied the number of operating rooms, operations, accredited surgeons, and anesthesia professionals as well as data on surgery death rates and postoperative in-hospital death rates. His analysis showed that the non-traditional surgeons perform 40% of all operations yet the country's surgical mortality rate is comparable to other regions in southern Africa. Cossa said he only recognized the need for this kind of data after being appointed chief of surgery by his country's ministry of health. People had begun to ask: How many surgeons are there? How many procedures are performed each year? What are the country's stats? While some of this information existed, Cossa suspected the numbers might not be reliable, particularly in rural areas. His Fogarty project, which showed where operating rooms are needed and which provinces most required a surgeon, has already influenced policy decisions. Following his lead, younger surgeons in Mozambique now express an interest in conducting research themselves. Cossa said he benefited from Fogarty's online training and networking opportunities which afforded him the opportunity to work with scientists in Peru, the U.S., and Spain. He looks forward to more collaborations across the globe. Cossa believes that research helps you develop as a health professional because collaboration teaches you what you're doing wrong and then gives you an opportunity to change your ways.

" THROUGH FOGARTY, THE MOST IMPORTANT THING I LEARNED IS COLLABORATION AND COOPERATION."

Nauzley Abedini, MD

Current affiliation: Assistant Professor, University of Washington, Seattle

Fogarty Scholar: 2012-2013

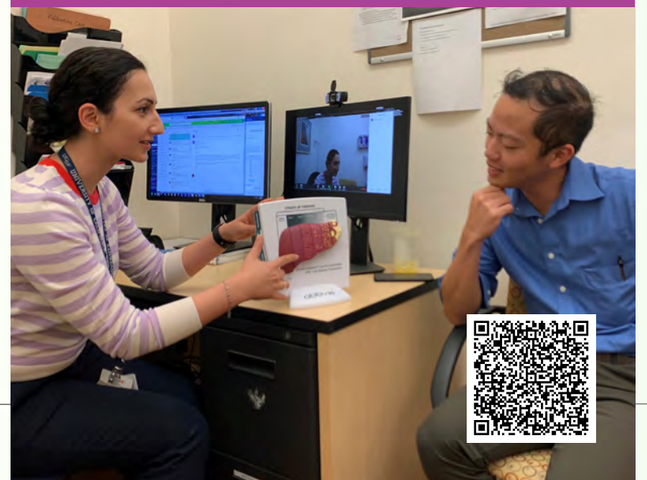
U.S. institution: University of Michigan

Foreign institution: Kwame Nkrumah University of Science and Technology, Ghana

Research topic: Neonatal jaundice in Ghana

Fogarty helped propel Dr. Nauzley Abedini to her current positions of Assistant Professor of Medicine at the University of Washington in Seattle and Assistant Program Director for Wellness in the University of Washington Internal Medicine Residency Program. She also serves as co-lead of the Global and Cross-Cultural Palliative Care Initiative. She arrived at this busy professional juncture following a Fogarty project in Ghana, where she researched jaundice, a complication of prematurity and birth injuries and one of the top five causes of mortality and the leading cause of neurological problems for infants in sub-Saharan Africa. With her fellowship, Abedini received on-the-job biostatistics training, which helped her analyze the data she'd collected. She identified a significant "upstream" problem, where moms did not recognize the signs of jaundice in their babies—yellow skin and eyes, lethargy, fever, poor feeding. This suggested to Abedini that researchers needed to address maternal education in Ghana before they attempted to devise solutions to diminish jaundice. As a result of her work, subsequent studies began to focus on communicating health instructions to moms. Lasting personal benefits of her time with Fogarty include the mixed-methods research skills she developed and ongoing friendships with her mentors. In fact, one Fogarty mentor is now her research partner. Currently, she is collaborating to create an agenda around improving palliative care delivery to stroke survivors and their families in Peru, while applying human-centered design to pilot a conversation guide for clinicians, stroke survivors and their caregivers in the U.S. She emphasizes the importance of being mindful of contextual differences when partnering with people from other backgrounds and other countries. She recommends new researchers read widely to enhance their expertise and to identify knowledge gaps that lead to future research questions.

" TAKE YOUR TIME IN CHOOSING YOUR MENTORS AND MAKE SURE YOU SET EXPECTATIONS AND BE HONEST ABOUT WHAT YOU CAN AND CAN'T DO."



Jessica Manning, MD, MSc

Current affiliation: Assistant Clinical Investigator, National Institute of Allergy and Infectious Diseases, NIH

Fogarty Scholar: 2008-2009

U.S. institution: University of Maryland Center for Vaccine Development

Foreign institution: University of Bamako, Mali

Research topic: Gene expression in host immune response to malaria

Dr. Jessica Manning is a researcher who wears many hats. She is an assistant clinical investigator in the Laboratory of Malaria and Vector Research at the National Institute of Allergy and Infectious Diseases (NIAID), head of NIAID's International Center of Excellence for Research in Cambodia, and Science Attaché at the U.S. Embassy in Phnom Penh, Cambodia. Currently, she resides full-time in Cambodia, where she leads NIAID's collaborative field sites and laboratories devoted to clinical and translational research of vector-borne diseases, like dengue and multi-drug resistant malaria, as well as emerging pathogens. In January 2020, her lab sequenced the SARS-CoV-2 genome of the first patient diagnosed with COVID-19 in Cambodia. To do this, her lab developed a new protocol to overcome their sequencer's limited power that was then shared with other labs in resource-scarce settings. Now that the world has begun to adjust to life with COVID, she's shifting back to her main research focus to better understand vector-borne diseases, specifically mosquito-borne pathogens. Manning and her team recently published a study highlighting their first in-human assessment of "mosquito-bitten" skin. They performed skin biopsies and applied a variety of immunological analyses to understand the impact of mosquito saliva on the immune response in the skin. This research is critical for the future development of vector-borne disease vaccines in endemic populations, which are often located in low- and middle-income countries where people experience chronic exposure to certain vectors like mosquitoes their entire lives. Her advice to up-and-coming researchers in global health is to "remain courageous and remain dedicated to better understanding the monumental problems of global health."

" FOGARTY TAUGHT ME THAT EVERYWHERE YOU GO, YOU HAVE TO DRINK THE TEA . . . CULTURAL FLUENCY IS KEY."

Omar Siddiqi, MD, MPH

Current affiliation: Director, Global Neurology Program, Beth Israel Deaconess Medical Center; Assistant Professor, Neurology, Harvard Medical School; Visiting Lecturer, University of Zambia School of Medicine

Fogarty Fellow: 2010–2011

U.S. institution: Beth Israel Deaconess Medical Center

Foreign institution: University of Zambia

Research topic: Causes of brain infections in the HIV population

In 2005, when Dr. Omar Siddiqi first arrived in Zambia, neuroimaging and advanced neurological tests were not available to Zambian doctors, so they conducted only rudimentary tests on spinal fluid. A neurology resident at Beth Israel Deaconess Medical Center, Siddiqi was hoping to explore opportunities for neurology research in the country. In 2010, he returned as a Fogarty Clinical Research Fellow studying the causes of infections in the brain, mainly meningitis and encephalitis, among the HIV population. Siddiqi found scant information about his topic, despite the country's huge burden of those diseases, so he set to work gathering data and classifying the full spectrum of neurological diseases in the HIV population. This work motivated Siddiqi to help launch a neurological training program in 2018, which, in its first year, included three adult and two pediatric neurologists-in-training, all from Zambia. The program helped build capacity while enriching the research environment in Zambia, allowing doctors and researchers to examine neurological diseases in more detail and to answer research questions that might help residents of other low- and middle-income countries as well as those living in high-income countries. Siddiqi remained in Zambia for a total of 11 years. Today, Zambia boasts a neurology training program, a cerebrospinal fluid molecular diagnostic laboratory and neurophysiology laboratory complete with CT and MRI scanners. And the neurology clinic he helped set up sees up to 60 patients a day. Though he is now based in the U.S., Siddiqi remains active in Zambia, where his NIH-funded laboratory tries to improve diagnosis of central nervous system infections in people living with HIV. He also co-founded the Zambia Institute of Neurological Care, Research, and Education (ZINCARE), located on the main campus of the University Teaching Hospital in Lusaka.

"STAY PERSISTENT. THE SYSTEM REWARDS THOSE WHO STAY AT IT DESPITE ALL THE ADVERSITY."

Richard van-Zyl Smit, MD, PhD

Current affiliation: Consultant Pulmonologist, Groote Schuur Hospital, South Africa; Deputy Head, Division of Pulmonology, University of Cape Town Lung Institute, South Africa

Fogarty Fellow: 2009-2010

U.S. institution: Vanderbilt University

Foreign institution: University of Cape Town, South Africa

Research topic: The interaction of tobacco smoke and pulmonary defenses against TB

Dr. Richard van-Zyl Smit, credits his Fogarty Fellowship as the starting block for his career and a fantastic immersion into research. For his project, he exposed TB-infected macrophages to tobacco smoke and nicotine to test their immune responses and found that this exposure significantly reduced the production of cytokines, key to the body's defense against a tuberculosis infection. Later, van-Zyl Smit replicated his results using vaping products, suggesting a potential mechanism to explain the epidemiological link between tobacco smoking and the risk of TB infection. Since his fellowship, he has been actively involved in poverty-related respiratory health issues in South Africa, which has some of the highest rates of tuberculosis, chronic obstructive pulmonary disease (COPD) and several other chronic respiratory illnesses globally. He presented his Fogarty data at an American Thoracic Society meeting in 2008 and was awarded an international trainee scholarship from that presentation. Van Zyl-Smit currently serves as the president of the South African Thoracic Society, co-chair of the American Thoracic Society International Health committee, and a global ambassador for the Global Initiative for Asthma. Today he runs the American Thoracic Society's international scholarship program. In addition to his work as a pulmonologist, van Zyl-Smit has become an advocate for mental health in recent years. After being diagnosed with stress-induced anxiety in 2016, he began "They Don't Award Nobel Prizes to Dead People." The book, which helped him process his anxiety, advocates for a culture change with a stronger emphasis on work-life balance. A second book, "Thoughts on a Saturday Morning: A collection of essays on life, work and relationships during COVID-19," discusses the stress he and his fellow health care workers suffered at the hands of the COVID-19 pandemic in South Africa. Today, as a consultant pulmonolo- gist at Groote Schuur Hospital in Cape Town, South Africa and a deputy head of the division of pulmonology at the University of Cape Town Lung Institute, van-Zyl Smit likes to remind his colleagues to care for themselves and each other. "We are of greater value alive and functional than dead or dysfunctional."

"MY FOGARTY PROJECT GAVE ME ACCESS TO AN ENTIRELY NEW NETWORK OUTSIDE OF MY REGION, AND I WOULD NOT BE IN THE POSITION I AM TODAY WITHOUT THOSE CONNECTIONS."

Jacqueline Firth, MD, MPH

Current affiliation: Branch Chief, Pediatric and Maternal Clinical HIV Branch, USAID

Fogarty Fellow: 2004-2005

U.S. institution: Tufts University; Brown University

Foreign institution: Christian Medical College, India

Research topic: Child and maternal health

During her first study abroad opportunity in Niger as an undergraduate at Georgetown University, Dr. Jacqueline Firth shadowed doctors at the national hospital treating a meningitis outbreak. Unfortunately, the hospital was so severely under-resourced at the time that the same needle was used on several patients to do lumbar punctures. Seeing this, Firth, who wasn't yet in medical school, decided to pursue a dual-track career as a clinician in public health. Four years later, she became a member of Fogarty's inaugural cohort of Fellows and Scholars in 2004. During her Fogarty year in Vellore, India, Firth participated in two studies, one surveyed pregnant women about their understanding of HIV and another tested the water-purifying qualities of moringa, a naturally occurring plant. The first project revealed a low level of both HIV rates and awareness of HIV prevention methods among women in India. The second project showed that adding moringa to water did not improve cleanliness, though chlorine did. Despite chlorine being the cleanest option, an aversion to chlorinated water led the community to decide against it. Firth worked on the manuscripts for both projects and credits this and other experiences during her Fogarty year with preparing her for her current role as Branch Chief of the Pediatric and Maternal Clinical HIV Branch at USAID. Among her many tasks, she and her team identify mothers and children that might have been missed during the antenatal or postnatal testing period for HIV and provide support to families with kids in HIV care, especially when they reach adolescence, a time when many patients drop out of treatment. Firth also works to ensure that health care providers for mothers and children enrolled in PEPFAR-funded HIV programs worldwide have access to the latest research and best practices in medication protocols, care, retention, prevention, and testing. In the meantime, Firth continues her clinical work by volunteering at the Department of Health tuberculosis clinic in Washington, D.C., once a week.

"BECAUSE OF THE WORK I DID WITH FOGARTY, I KNOW WHAT IT TAKES TO RUN THESE PROGRAMS ON BOTH SIDES."

Rockefeller Oteng, MD

Current affiliation: Clinical Associate Professor, Emergency Medicine, University of Michigan

Fogarty Fellow: 2013–2014

U.S. institution: University of Michigan

Foreign institution: Komfo Anokye Teaching Hospital, Ghana

Research topic: Road traffic injuries and trauma outcomes in Ghana

Dr. Rockefeller Oteng traveled to Ghana, the country of his birth, as part of a team to train physicians and establish the country's first emergency medicine department at Komfo Anokye Teaching Hospital. Once there, he found it difficult to determine whether or not his new team had improved patient outcomes. His Fogarty fellowship, supported by the National Institute of General Medical Sciences, focused on measuring changes in patient outcomes as a result of the new emergency care department. He located and analyzed records from 50 trauma patients and produced two recommendations: include more sepsis training in the curriculum and give patients only one identification number so they can be more easily tracked. His project, which taught him how to conduct research, how to describe his thinking, and how to translate his discoveries, led to the creation of a robust trauma/injury database and a clinical research unit in the emergency department at the hospital. The role of research assistant has since been professionalized, while the database has expanded to include traumatic brain injury and acute stroke patients. Following his fellowship, Oteng received funding from Fogarty and the National Institute of Neurological Disorders and Stroke to investigate the treatment and management of patients who have suffered traumatic brain injuries in the Ashanti region. He followed and evaluated patients' quality of life and so continued to develop his clinical research skills. Preventable deaths from injury, trauma, or treatable infections are a heavy burden throughout sub-Saharan Africa. It is Oteng's hope that the expertise developed in Ghana will be shared throughout the region. Currently, Oteng is completing graduate courses to further refine his own research skills and abilities.

"GLOBAL HEALTH HAS NOT BEEN OF SIGNIFICANT VALUE, HISTORICALLY, TO THOSE IN DEVELOPING SETTINGS SO MAKE YOUR WORK IN GLOBAL HEALTH PURPOSEFUL."

Roxanna Garcia, MD, MPH

Current affiliation: Assistant Professor, Neurological Surgery, Northwestern University

Fogarty Fellow: 2019–2020

U.S. institution: Northwestern University

Foreign institution: Universidad Peruana Cayetano Heredia, Peru

Research topic: Neurosurgical care and capacity in Peru

Dr. Roxanna Garcia's path into neurosurgery was never clear in her mind. As a first-generation medical school applicant, she says, "I was skeptical that I would even be accepted into medical school, let alone become a surgeon, and especially not a neurosurgeon." Her Fogarty project aimed to describe the current health care system in Peru and its level of preparedness to provide essential and primary neurosurgical care. She also identified target areas for further research projects and interventions that would strengthen the surgical ecosystem within Peru. Her research team found that there were often delays in accessing the country's basic and essential primary care, let alone higher-level care and surgical care. Everyone in the Peruvian system receives an identification number, similar to the Social Security number in United States. However, not all hospitals are connected virtually causing discrepancies in tracking and follow-up with patients. Many hospitals her team studied, even in very populated cities, lacked the tools, workforce, and institutional support to perform basic craniotomies, a potentially life-saving procedure for patients suffering from subdural hematomas. This condition, when blood collects between the covering of the brain (the dura) and the surface of the brain, occurs in up to 25% of patients suffering a brain injury and can be deadly if not treated quickly. Ultimately her team recommended that the literature on neurosurgery access needs to be expanded to improve publication bias and understand the disparities in access to neurosurgical care in low-and-middle-income countries. Today, Garcia serves as an assistant professor of neurological surgery at Northwestern University's Feinberg School of Medicine with about six more years before officially becoming a board-certified neurosurgeon. She advises future trainees, especially those interested in neurosurgery, to "Embrace the challenges in your personal and academic life. No one is immune, but if you keep positive and continue to network and connect with mentors, it can change your life."

"I FEEL INCREDIBLY FORTUNATE TO HAVE FOUND THIS PATH AND TO BE A PART OF FOGARTY'S COMMUNITY OF GLOBAL HEALTH EXPERTS."

Siana Nkya, PhD

Current affiliation: Senior Lecturer, Department of Biological Sciences, Muhimbili University of Health and Allied Sciences, Tanzania

Fogarty Fellow: 2016–2017

U.S. institution: University of California, San Francisco

Foreign institution: Muhimbili University, Tanzania

Research topic: Genetic determinants of sickle cell disease

Dr. Siana Nkya, a researcher from Tanzania, has focused her career on studying sickle cell disease and its genetic determinants to find new interventions for the disease. After completing her doctorate in human genetics, Nkya expanded upon her research through a Fogarty Fellowship with the GloCal Health Fellowship at the University of California, San Francisco. For her project, she studied patients in Tanzania with high fetal hemoglobin levels, looking for specific genetic patterns that might impact the severity of sickle cell disease. She stated that Fogarty's focus on mentored research and career development helped her become more successful as an independent researcher. Following her fellowship, Nkya helped develop a newborn screening pilot program at the Temeke and Muhimbili hospitals, based in Dar Es Salaam, the first ever in Tanzania. In 2019, she earned an Emerging Global Leader Award to continue her research investigating the role of fetal hemoglobin decline and its determinants on sickle cell disease expression in the first three years of a child's life. This work, now in its fourth year, examines the correlation between the age a child presents with sickle cell disease, how high fetal hemoglobin levels impact the severity of the disease and the rate of fetal hemoglobin decline. So far, over 250 children have enrolled and participated in the study. In addition to research and lecturing, Nkya and her colleague, Dr. Mohamed Zahir Alimohamed, founded the Tanzanian Human Genetics Organization to advocate for research and training, increased awareness, and improved diagnostics in human genetics and related fields across the country. Looking to the future, Nkya hopes her research will help identify genes and genetic variants in patients with sickle cell disease, opening the door to new interventions and therapeutics.

"IT HAS MADE ME HOPEFUL TO SEE THAT WE HAVE MORE SCIENTISTS WHO CAN DO RESEARCH IN THE CONTEXT OF AFRICA."

Shuchi Anand, MD

Current affiliation: Director, Center for Tubulointerstitial Kidney Disease, Stanford University

Fogarty Fellow: 2012-2013

U.S. institution: Stanford University; University of California, Berkeley

Foreign institution: Centre for Chronic Disease Control, India

Research topic: Chronic kidney disease (CKD) in developing regions

Dr. Shuchi Anand's passion for global health was born during a return visit to India, where she'd lived until age 12. Making a hospital visit in her hometown, she was struck by the differences in care as compared to what she'd seen in her new home, the United States. Years later in medical school, Anand seized every opportunity she could to work in developing countries. Eventually a Fogarty fellowship led her to the Centre for Chronic Disease Control, a research organization in New Delhi where Anand studied prevalence and risk factors for chronic kidney disease, a condition most commonly caused by diabetes and high blood pressure. Anand worked on the Center for Cardiometabolic Risk Reduction in South Asia (CARRS) Surveillance Study, which gathered information related to diabetes, cardiovascular disease, and chronic kidney disease from thousands of people living in New Delhi and Chennai, India and Karachi, Pakistan. In a 2015 paper, lead-author Anand estimated one in 12 people living in New Delhi and Chennai have evidence of chronic kidney disease. Today, the associate professor in the Department of Medicine at Stanford University School of Medicine continues to explore non-traditional causes of kidney diseases in diverse settings with support from the National Institute of Diabetes and Digestive and Kidney Diseases. As director of the Center for Tubulointerstitial Kidney Disease at Stanford, she finds her clinical work parallels her research interests. To those considering a career in global health research, she suggests reflecting on the types of research or projects that spark inspiration. She believes inner drive and motivation are needed to persist in global research endeavors. "If you persist, you will succeed!"

" MY FOGARTY PROJECT IS THE LYNCHPIN OF MY CAREER."

Sikhulile Moyo, PhD, MPH

Current affiliation: Laboratory Director, Botswana-Harvard AIDS Institute Partnership

Fogarty Fellow: 2017–2018

U.S. institution: Harvard T.H. Chan School of Public Health

Foreign institution: Stellenbosch University, South Africa

Research topic: Evolutionary trends and dynamics of HIV-1C in Botswana

Dr. Sikhulile Moyo arrived for his Fogarty Fellow & Scholars orientation on the NIH campus in 2017 as a doctoral student in medical virology. A little over five years later he would be credited with discovery of the Omicron variant of SARS-CoV-2. His Ph.D. work took place, in part, at the Harvard School of Public Health, where he designed a research study from scratch, and learned about the project submission process, the intricacies of informed consent, methods for storing biological specimens, and how to design his own protocols. Funded by both Fogarty and the National Institute of Mental Health, Moyo's research led to six publications and new research collaborations. As a fellow, Moyo learned that scientists who have few resources can do impactful translational research. Following Fogarty, he returned to the Botswana-Harvard AIDS Institute where he translated his HIV knowledge to tackle hepatitis, human papillomavirus, noroviruses, and tuberculosis. There, he mentored students in the use of sequence data to better understand pathogens. After years of using genomic sequencing to study various diseases, Moyo was well-prepared to pivot to COVID-19 when the pandemic disease struck Botswana. A member of the presidential pandemic task force, Moyo helped establish national guidelines for testing and genomic surveillance. Adhering to his own sampling and sequencing policies, the institute lab team, which he heads, found an intriguing pattern of mutations among the SARS-CoV-2 samples collected in mid-November 2021. After alerting the health department, his team deposited the sequences into the international GISAID database. Within a week, WHO's virus working group had classified Moyo's discovery as a "variant of concern" and later labeled it the "Omicron" variant. This led to a roller coaster of positive effects, such as the provision of more PCR kits for his lab, and negative effects, such as the closing of borders, noted Moyo. Still, he believes this bittersweet experience will spur increased scientific collaboration with global partners for his lab.

" YOU MEET PEOPLE WHO HAVE FEW RESOURCES, YET THEY DO QUITE IMPACTFUL RESEARCH. THAT CHANGED MY MINDSET."

Abigail Cortez, MD

Current affiliation: Orthopedic Surgery Resident, University of California, Los Angeles

Fogarty Fellow: 2020-2021

U.S. institution: University of California, San Francisco

Foreign institution: Muhimbili Orthopedic Institute, Tanzania

Research topic: Trauma care in low- and middle-income countries

Dr. Abigail Cortez is a recent Fogarty Fellow out of the GloCal consortium at the University of California, San Francisco. For her Fogarty project, she studied surgical outcomes of patients with tibia fractures in Tanzania to compare different treatment methodologies, either internally placing a nail or plate to stabilize the tibia or externally using pins and rods. While external fixation is far less invasive, it requires a much longer healing time, which is difficult for working patients whose jobs require mobility. Her study ultimately found that there are no fundamental differences between the two surgical approaches, even two to five years after the initial surgery. This proved that the internally applied nail did not cause higher rates of infection and is a viable alternative to external fixation, which is often preferred in low- and middle-income countries. Cortez, now an orthopedic surgery resident at the University of California, Los Angeles, was forced to work remotely due to the COVID-19 pandemic. To work around lockdown restrictions, her research team developed a detailed questionnaire to elicit the same level of information, even though they couldn't physically be with the patient. Today she is finishing her residency and working on two projects that employ the skills she learned during her Fogarty experience. One will examine amputation and the impact of prosthetic devices in LMICs, and the second will study post-surgical infection rates. Cortez invites surgeons like herself to get involved in the global health space. "After my Fogarty year, I feel a lot more confident conducting research independently, and I think it's only going to help my career."

" MY LIFE HAS CHANGED FOR THE BETTER BECAUSE OF FOGARTY. I LEARNED SO MUCH, AND MADE SO MANY VALUABLE CONNECTIONS."

Weiming Tang, PhD

Current affiliation: Co-director, UNC Project-China; Advisor, SESH Global

Fogarty Fellow: 2015-2016

U.S. institution: University of North Carolina, Chapel Hill

Foreign institution: Sun Yat-sen University, Guangzhou, China

Research topic: Promoting HIV/STI testing, digital health, and telemedicine tools

Dr. Weiming Tang chose his research area after several years of volunteer work in his home country of China. While in college, he worked to spread awareness about HIV among the student population and later established a peer-to-peer training program on HIV education at other universities. This effort helped him understand the need for growth in this area. A unique feature of Tang's research is his use of crowdsourcing to develop tools for the men who have sex with men (MSM) and the transgender populations in China. The stigma around these communities often pushes individuals into the shadows, forcing them to use more discreet forms of communication, and crowdsourcing allows researchers to work directly with communities and develop interventions tailored to their needs. Tang's Fogarty project aimed to study the cost-effectiveness of HIV testing campaigns among MSM and transgender individuals in China. Comparing a crowdsourced video to a promotional video created by a health marketing team promoting HIV testing, the team found a 2% difference in the uptake rates between the two, with the crowdsourced version being slightly more favorable. Yet the crowdsourced intervention cost substantially less: US$131 vs. US$238 per first-time HIV test and US$415 vs. US$799 per new HIV diagnosis. Learning how to do a cost-effective analysis was instrumental, said Tang, whose Fogarty year brought many changes, including a promotion to postdoctoral fellow followed almost immediately by a promotion to faculty. Today, Tang is co-director of the UNC China Project, a collaboration between the University of North Carolina at Chapel Hill and Chinese partner organizations that aims to improve health and expand collaboration for global health research. He uses crowdsourcing methodologies for mental health issues related to COVID-19, while continuing to use tools like crowdsourcing and tele-medicine to reduce HIV stigma and increase testing among affected communities in China.

" FOGARTY HELPED ME DEVELOP THE FOUNDATION FOR MY FUTURE RESEARCH AND BUILD STRONG RELATIONSHIPS WITH CHINESE RESEARCH INSTITUTES."

Yvetot Joseph, MD

Current affiliation: Research Physician and Research Coordinator, GHESKIO Centers, Haiti

Fogarty Fellow: 2018–2019

U.S. institution: Weill Cornell Center for Global Health

Foreign institution: GHESKIO Centers, Haiti

Research topic: Immune factors associated with recurrent tuberculosis in HIV-infected patients

Dr. Yvetot Joseph joined the GHESKIO Clinical Trials Unit as a research physician in 2015 after completing his medical degree and postgraduate training in infectious disease and HIV at the Université Notre Dame d'Haïti and the University of Maryland, Baltimore Partnership. GHESKIO, an organization that operates medical treatment and research centers in Port-au-Prince and other sites around Haiti, is the largest research center for HIV and tuberculosis (TB) in the Caribbean. As a research physician and GHESKIO coordinator, Joseph ensures trials are completed despite the many unforeseen challenges that may arise in a low-resource setting. In 2018, Joseph became a Fogarty fellow and began to study the association between successful TB treatment and the long-term mortality of those living with HIV under his GHESKIO mentors, Drs. Jean Pape, Karine Severe, and Dan Fitzgerald. While TB is preventable and curable, it remains one of the leading causes of death among people living with HIV, accounting for about one-third of all reported deaths. The team enrolled approximately 816 patients to participate in a 14-year longitudinal study beginning in 2005. Analyzing the data, they found that those successfully treated for TB had a better chance for a longer life span compared to those who were never diagnosed. While there is still much to learn about the underlying mechanisms associated with TB, their immediate recommendation based on this study is to implement aggressive measures for health promotion and disease prevention for people living with HIV. Joseph hopes to continue this research, yet efforts at GHESKIO have shifted to focus on the resurgence of cholera in Haiti. The Ministry of Public Health has reported more than 13,000 cases of this a bacterial disease, often spread through contaminated water, and over 280 deaths in the current outbreak, exacerbated by political conflict, lack of fuel, and a suffering economy. As Haiti welcomes the first batch of cholera vaccines, Joseph has been focused on educating and encouraging people to seek help. Joseph is now preparing to graduate from Cornell with a Master of Science in Clinical Research, with plans to pursue a PhD.

" I AM GRATEFUL FOR THE MENTORS I HAVE MET THROUGH MY FOGARTY PROJECT AND THE OPPORTUNITIES IT HAS OPENED FOR ME."

Lilliam Pinzón, DDS, MPH

Current affiliation: Section Head, Public Health and Global Health, and Associate Professor, University of Utah School of Dentistry

Fogarty Scholar: 2014–2015

U.S. institution: University of California, San Francisco

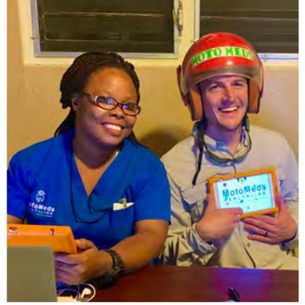
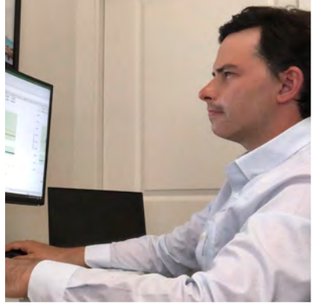
Foreign institution: Universidad Autonoma de Baja California-Tijuana, Mexico

Research topic: Evaluate dental restorations in underserved HIV+ children

As a 2014 Fogarty Fellow, Dentist Lilliam Pinzón traveled from California to Tijuana, Mexico, where she contributed to a study comparing a traditional filling compound with a newer material that bonds to teeth and releases fluoride over time to see which is more cost-effective and better suited to children with HIV. The study, supported by the National Institute of Dental and Craniofacial Research, included a 60-question survey to look for cavity risk factors, such as poor diet and hygiene. The research team found that stigma discouraged patients from seeking free health services and that short-term side effects caused some patients to abandon their antiretroviral treatment or relapse into a drug habit. Pinzón's fellowship taught her study design and methodology as well as data analysis while increasing her determination to help patients. She also learned the value of strengthening ties with colleagues from other institutions to help adapt to the needs of specific populations. Since Fogarty, she's partnered with the Universidad Autonoma de Baja California-Tijuana to create academic exchanges for students and faculty members, which has resulted in several research projects related to HIV, HPV, and minimally invasive techniques for underserved populations. This team continues to flourish today, and, with Universidad de Antioquia in Colombia, Pinzón is helping to create an alliance with seven other dental schools in Mexico, El Salvador, Costa Rica, Argentina, Peru, Panama, and Chile. Their American Continent Global Health Seminar aims to contextualize relationships among the United Nations Sustainable Development Goals, global health, and the dental profession while creating a collaborative research and work agenda. The first year of monthly seminars featured speakers from the National Institutes of Health, the United Nations, the World Health Organization, university faculty, and experts from industry. Currently, Pinzón is implementing with the Universidad de Antioquia a randomized clinical trial among the Wayuu population in Colombia. In 2023, she will assume the role of Utah Section President of the American Association for Dental, Oral, and Craniofacial Research.

" KEEP YOURSELF HUMBLE. HUMILITY ALLOWS YOU TO ALWAYS LEARN AND SEE REALITY FROM AN UNASSUMING PERSPECTIVE."

PETER KILMARX, MD
Acting Director, Fogarty International Center

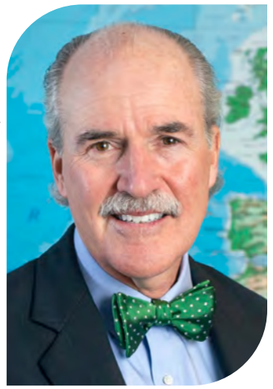





As Deputy Director of the Fogarty International Center for the last seven years and now as Acting Director, it has always been a pleasure to meet the Fogarty Global Health Fellows and Scholars in their annual orientation or at their research sites around the world. Hearing about their many accomplishments and seeing the impact of former Fellows and Scholars over the years has been truly remarkable.

It is extraordinary to see how a single year can have such a profound, defining influence on one's life and career. Many common themes come through in these profiles. Being exposed to new cultures and seeing up close some of the health care challenges in resource-poor settings was very inspiring for the U.S. trainees. Seeing the power of research and discovering how to improve health and health systems was also highly motivating for all participants. Receiving mentorship and developing networks were also critical aspects of their professional development. Many former trainees describe how they have mentored those who came after them, paying back the benefit to the next generation. It is especially gratifying to read about "second-generation" mentees such as Dr. Anubha Agarwal, who as a Fogarty Fellow in 2017-18 was mentored by Dr. Gerald Bloomfield, a 2009-10 Fellow.

The mission of the Fogarty International Center is to support and facilitate research, build partnerships, and train the next generation of scientists. Even in the short term, the Fellows and Scholars Program is highly effective in advancing these goals. Reading about the career trajectories of these former trainees and their leadership roles in global health research, education, programs, and policies affirms that this program is a great long-term investment and a "best buy" for Fogarty that should be continued long into the future.

We are very grateful to the many program leaders, staff, and mentors in the United States and around the world for their vision, commitment, and hard work on behalf of the trainees. The seven consortia in the current Launching Future Leaders in Global Health (LAUNCH) Research Training Program and their global partners may be especially commended for their commitment to including trainees with diverse backgrounds and promoting equity for the international program participants. We're thankful for the support of more than a dozen other NIH Institutes, Centers, and Offices. Their funding is important, but perhaps more significant are the linkages with their networks of researchers, mentors, and programs, building global health research capacity, partnerships, and careers across a wide span of scientific disciplines and health specialties.



" MANY FORMER TRAINEES DESCRIBE HOW THEY HAVE MENTORED THOSE WHO CAME AFTER THEM, PAYING BACK THE BENEFIT TO THE NEXT GENERATION."

I also appreciate the many Fogarty staff who have dedicated their professional time and energy to supporting this program, especially those in the Division of International Training and Research and also the Office of Communications, who publicize the successes of the trainees and produced this excellent 20th anniversary book. Of course, we applaud the Fellows and Scholars themselves who dedicated a year of their lives early in their careers to a research training experience, which, with great dedication and effort, in many cases led to lifelong commitments. Finally, we all are indebted to Dr. Roger Glass, who, as the Fogarty Director for 17 of the 20 years of this program, was a tireless champion of the grantees and the trainees, personally connecting with and encouraging them and recruiting support for them from across NIH and around the world.

Congressman John E. Fogarty, for whom our Center was named, was a representative from my home state of Rhode Island and an extraordinarily effective promoter of NIH and international health research and training. He was prescient in his vision, stating, "I think that this matter of expanding research is one, perhaps the one, truly global effort in which all nations can and will join as real partners." The most compelling and recurring theme in the profiles in this book is how real partnerships were formed through the Fogarty Global Health Fellows and Scholars/LAUNCH Program across borders, institutions, professions, and generations. Congressman Fogarty would be astonished, ecstatic, and very proud.

REAL PARTNERSHIPS WERE FORMED THROUGH THIS PROGRAM ACROSS BORDERS, INSTITUTIONS, PROFESSIONS AND GENERATIONS.

Rep. John Edward Fogarty
1913-1967

" JUST AS DISEASE KNOWS NO NATIONAL BOUNDARIES SO ALSO THE BENEFITS OF MEDICAL RESEARCH AND INDEED RESEARCH ITSELF CAN KNOW NO BOUNDARIES. TIME AND TIME AGAIN, IT HAS BEEN DEMONSTRATED THAT THE GOAL OF BETTER HEALTH HAS THE CAPACITY TO DEMOLISH GEOGRAPHIC AND POLITICAL BOUNDARIES AND TO ENTER THE HEARTS AND MINDS OF MEN, WOMEN, AND CHILDREN IN THE FOUR CORNERS OF THE EARTH."

ACKNOWLEDGEMENTS

We are grateful to the founders of this program, Aron Primack, Pierce Gardner and former Fogarty Director Gerald Keusch (1998-2003). Their vision birthed this program, giving medical doctors an opportunity to do clinical research in a global context. We want to thank Acting Fogarty Director Peter Kilmarx and former Fogarty Director Roger Glass (2006-2023) for their leadership. We also want to recognize past and present Fogarty program staff, principal investigators, and mentors, both in the U.S. and abroad, who contributed to the Fellows and Scholars program over the years.

Global Health Fellows & Scholars Program founders, Aron Primack (left) and Pierce Gardner (right), at the first program orientation in 2004.

ACHIEVE – Washington University, New York University, Boston College, University of Illinois at Chicago, Makerere University, University of Makeni, University of Rwanda, University of Kwazulu-Natal, University of Ghana
Principal Investigators: Fred M Ssewamala, Theresa Stichick Betancourt, Keng-yen Huang, Mary Mckernan Mckay, Yesim Tozan, Stevan Merrill Weine

GHES – Yale University, Stanford University, University of Arizona, University of California at Berkeley
Principal Investigators: Albert Icksang Ko, Michele Barry, Purnima Madhivanan, Lee W Riley

GLOCAL - University of California San Francisco, University of California San Diego, University of California Los Angeles, University of California Davis
Principal Investigators: Craig R Cohen, Sung-Jae Lee, Natasha Martin, Beatriz Martínez-López

HBNU – Harvard School of Public Health, Boston University, Northwestern University, University of New Mexico
Principal Investigators: Wafaie W Fawzi, Davidson Howes Hamer, Claudia A Hawkins, Douglas Jay Perkins

INSIGHT - University of Maryland Baltimore, University of Alabama at Birmingham, Baylor College of Medicine, University of Pittsburgh
Principal Investigators: Manhattan E Charurat, Anna M Mandalakas, Vishwajit Laxmikant Nimgaonkar, Janet M Turan

NPGH – University of Washington, University of Hawaii, University of Michigan, University of Minnesota
Principal Investigators: Joseph Raymond Zunt, Cheryl A Moyer, Vivek Ramchandra Nerurkar, Shailendra Prasad

UJMT – University of North Carolina Chapel Hill, Johns Hopkins University, Morehouse School of Medicine, Tulane University
Principal Investigators: Benjamin H Chi, William Checkley, Kofi A Kondwani, Richard A Oberhelman

VECD – Vanderbilt University, Duke University, Emory University, Weill Cornell Medical College
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BY TAKING SCIENCE TO WHERE THE PROBLEMS ARE, AND BY SUPPORTING RESEARCH AND RESEARCH TRAINING IN AREAS WHERE THE BURDEN OF DISEASE IS GREATEST, FOGARTY INVESTMENTS WILL CONTINUE TO BUILD THE HEALTH RESEARCH WORKFORCE OF THE FUTURE WHILE BRINGING SCIENTIFIC INQUIRY TO BEAR ON SOME OF THE WORLD'S MOST COMPLEX HEALTH PROBLEMS AFFECTING POPULATIONS BOTH AT HOME AND ABROAD.

Global Health Fellows & Scholars
20TH ANNIVERSARY

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